WHAT IS CLAIMED IS:

1. A method of producing a modulated beam of electromagnetic energy comprising:

[a] producing an initial beam of electromagnetic energy having a predetermined range of wavelengths and having a substantially uniform flux intensity substantially across the initial beam of electromagnetic energy;

[b] separating the initial beam of electromagnetic energy into two or more separate beams of electromagnetic energy, each of the separate beams of electromagnetic energy having a selected predetermined orientation of a chosen component of electromagnetic wave field vectors;

[c] altering the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of a plurality of portions of each of the separate beams of electromagnetic energy by passing the plurality of portions of each of the separate beams of electromagnetic energy through a respective one of a plurality of altering means whereby the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the plurality of portions of each of the separate beams of electromagnetic energy is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of each of the substantially separate beams of electromagnetic energy passes through the respective one of the plurality of means for altering the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors;

[d] combining the altered separate beams of electromagnetic energy into a single collinear beam of electromagnetic energy without substantially changing the altered selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the plurality of portions of each of the separate beams of electromagnetic energy; and

[e] resolving from the single collinear beam of electromagnetic energy a first resolved beam of electromagnetic energy having substantially a first selected predetermined orientation of a chosen component of electromagnetic wave field vectors and a second resolved beam of electromagnetic energy having substantially a

second selected predetermined orientation of a chosen component of electromagnetic wave field vectors, whereby the first and second selected predetermined orientation of the chosen component of the electromagnetic wave field vectors are different from one another.

2. A method as described in claim 1 wherein step [a] includes producing the initial beam of electromagnetic energy further having randomly changing orientations of a selected component of the electromagnetic wave field vectors, and step [b] includes separating the initial beam of electromagnetic energy into two or more separate beams of electromagnetic energy whereby each of the separate beams of electromagnetic energy has substantially the same selected predetermined orientation of the chosen component of the electromagnetic wave field vectors substantially across each of the separate beams of electromagnetic energy as that of the other separate beams of electromagnetic energy.

3. A method as described in claim 1 wherein step [a] includes producing the initial beam of electromagnetic energy further having substantially the same selected predetermined orientation for the chosen component of the electromagnetic wave field vectors substantially across the beam.

4. A method as described in claim 1 wherein step [b] includes separating the initial beam into two or more substantially collimated separate beams.

5. A method as described in claim 1 wherein step [a] includes producing the initial beam of electromagnetic energy further having a rectangular cross sectional area and further having substantially the same selected predetermined orientation for the chosen component of the electromagnetic wave field vectors substantially across the beam.

6. A method as described in claim 1 further comprising the step of passing one of the resolved beams of electromagnetic energy from step [e] to a projection means.

7. A method as described in claim 1 further comprising the step of adjusting the electromagnetic spectrum of at least one of the separate beams of electromagnetic energy.

8. A method as described in claim 7 wherein the step of adjusting the electromagnetic spectrum of at least one of the separate beams of electromagnetic energy includes adjusting a predetermined range of wavelengths of at least one of the separate beams of electromagnetic energy.

9. A method as described in claim 7 wherein the step of adjusting the electromagnetic spectrum of at least one of the separate beams of electromagnetic energy includes adjusting the magnitude of at least one of the separate beams of electromagnetic energy.

10. A method as described in claim 1 wherein the step of separating the initial beam of electromagnetic energy into two or more separate beams of electromagnetic energy further includes means for separating the initial beam of electromagnetic energy into two or more separate beams of electromagnetic energy with each of the separate beams of electromagnetic energy having an energy spectrum different from each of the other separate beams of electromagnetic energy.

11. A method as described in claim 1 wherein the step for separating the initial beam of electromagnetic energy into two or more separate beams of electromagnetic energy further includes the step of separating the initial beam of electromagnetic energy into two or more separate beams of electromagnetic energy with each of the separate beams of electromagnetic energy having a predetermined range of wavelengths different from each of the other separate beams of electromagnetic energy.

12. A method as described in claim 10 further comprising the step of adjusting the magnitude of at least one of the separate beams of electromagnetic energy from step [b].

13. A method of producing a modulate, beam of light comprising:

[a] producing an initial beam of light having a predetermined range of wavelengths and having a substantially uniform flux intensity substantially across the initial beam of light;

[b] separating the initial beam of light into two or more separate beams of light, each of the separate beams of light having a selected predetermined orientation of a chosen component of electric field vectors;

[c] altering the selected predetermined orientation of the chosen component of the electric field vectors of a plurality of portions of each of the separate beams of light by passing the plurality of portions of each of the separate beams of light through a respective one of a plurality of altering means whereby the selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the separate beams of light is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of each of the separate beams of electromagnetic energy passes through the respective one of the plurality or means for altering the selected predetermined orientation of the chosen component of the electric field vectors;

[d] combining the altered separate beams of light into a single collinear beam of light without substantially changing the altered selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the separate beams of light; and

[e] resolving from the single collinear beam of light a first resolved beam of light having substantially a first selected predetermined orientation of a chosen component of electric field vectors and a second resolved beam of light having substantially a second selected predetermined orientation of a chosen component of electric field vectors, whereby the first and second selected predetermined orientation of the chosen component of the electric field vectors are different from one another.

14. A method as described in claim 13 wherein step [a] includes producing the initial beam of light further having randomly changing orientations of a selected

component of the electric field vectors, and step [b] includes separating the initial beam of light into two or more separate beams of light whereby each of the separate beams of light has substantially the same selected predetermined orientation of the chosen component of the electric field vectors substantially across each of the separate beams of light as that of the other separate beams of light.

15. A method as described in claim 13 wherein step [a] includes producing the initial beam of light further having substantially the same selected predetermined orientation for the chosen component of the electric field vectors substantially across the beam.

16. A method as described in claim 13 wherein step [b] includes separating the initial beam into two or more substantially collimated separate beams.

17. A method as described in claim 13 wherein step [a] includes producing the initial beam of light further having a rectangular cross sectional area and further having substantially the same selected predetermined orientation for the chosen component of the electric field vectors substantially across the beam.

18. A method as described in claim 13 further comprising the step of passing one of the resolved beams of light from step [e] to a projection means.

19. A method as described in claim 13 further comprising the step of adjusting the light spectrum of at least one of the separate beams of light.

20. A method as described in claim 19 wherein the step of adjusting the light spectrum of at least one of the separate beams of light includes adjusting a predetermined range of wavelengths of at least one of the separate beams of light.

21. A method as described in claim 19 wherein the step of adjusting the light spectrum of at least one of the separate beams of light includes adjusting the magnitude of at least one of the separate beams of light.

22. A method as described in claim 22 wherein the step of separating the initial beam of light into two or more separate beams of light further includes the step of separating the initial beam of light into two or more separate beams of light with each of the separate beams of light having a light spectrum different from each of the other separate beams of light.

23. A method as described in claim 22 wherein the step of separating the initial beam of light into two or more separate beams of light further includes the step of separating the initial beam of light into two or more separate beams of light with each of the separate beams of light having a predetermined range of wavelengths different from each of the other separate beams of light.

24. A method as described in claim 22 further comprising the step of adjusting the magnitude of at least one of the separate beams of light from step [b].

25. A method as described in claim 1 wherein step [a] includes producing an initial beam of ultraviolet.

26. A system for producing a modulated beam of electromagnetic energy comprising:

[a] means for producing an initial beam of electromagnetic energy having a predetermined range of wavelengths and having a substantially uniform flux intensity substantially across the initial beam of electromagnetic energy;

[b] means for separating the initial beam of electromagnetic energy into two or more separate beams of electromagnetic energy, each of the separate beams of electromagnetic energy having a selected predetermined orientation of a chosen component of electromagnetic wave field vectors;

[c] means for altering the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of a plurality of portions of each of the separate beams of electromagnetic energy by passing the plurality of portions of each of the separate beams of electromagnetic energy through a respective one of a

plurality of altering means whereby the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the plurality of portions of each of the separate beams of electromagnetic energy is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of each of the substantially separate beams of electromagnetic energy passes through the respective one of the plurality of means for altering the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors;

[d] means for combining the altered separate beams of electromagnetic energy into a single collinear beam of electromagnetic energy without substantially changing the altered selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the plurality of portions of each of the separate beams of electromagnetic energy; and

[e] means for resolving from the single collinear beam of electromagnetic energy a first resolved beam of electromagnetic energy having substantially a first selected predetermined orientation of a chosen component of electromagnetic wave field vectors and a second resolved beam of electromagnetic energy having substantially a second selected predetermined orientation of a chosen component of electromagnetic wave field vectors, whereby the first and second selected predetermined orientation of the chosen component of the electromagnetic wave field vectors are different from one another.

27. A system as described in claim 26 wherein the means for producing an initial beam includes means for producing the initial beam of electromagnetic energy further having randomly changing orientations of a selected component of the electromagnetic wave field vectors, and the means for separating the initial beam includes means for separating the initial beam of electromagnetic energy into two or more separate beams of electromagnetic energy whereby each of the separate beams of electromagnetic energy has substantially the same selected predetermined orientation of the chosen component of the electromagnetic wave field vectors substantially across each of the separate beams of electromagnetic energy as that of the other separate beams of electromagnetic energy.

28. A system as described in claim 26 wherein the means for producing an initial beam includes means for producing the initial beam of electromagnetic energy with substantially the same selected predetermined orientation for the chosen component of the electromagnetic wave field vectors substantially across the beam.

29. A system as described in claim 26 including means for substantially collimating each beam of electromagnetic energy.

30. A system as described in claim 26 wherein the means for producing an initial beam includes means for producing the initial beam of electromagnetic energy with a rectangular cross sectional area and substantially the same selected predetermined orientation for the chosen component of the electromagnetic wave field vectors substantially across the beam.

31. A system as described in claim 26 further comprising means for passing one of the resolved beams of electromagnetic energy to a projection means.

32. A system as described in claim 26 further comprising means for adjusting the electromagnetic spectrum of at least one of the separate beams of electromagnetic energy.

33. A system as described in claim 32 wherein the means for adjusting the electromagnetic spectrum of at least one of the separate beams of electromagnetic energy includes means for adjusting the predetermined range of wavelengths of at least one of the separate beams of electromagnetic energy.

34. A system as described in claim 32 wherein the means for adjusting the electromagnetic spectrum of at least one of the separate beams of electromagnetic energy includes means for adjusting the magnitude of at least one of the separate beams of electromagnetic energy.

35. A system as described in claim 26 wherein the means for separating the initial beam of electromagnetic energy into two or more separate beams of electromagnetic energy further includes means for separating the initial beam of electromagnetic energy into two or more separate beams of electromagnetic energy with each of the separate beams of electromagnetic energy having an energy spectrum different from each of the other separate beams of electromagnetic energy.

36. A system as described in claim 35 wherein the means for separating the initial beam of electromagnetic energy into two or more separate beams of electromagnetic energy further includes means for separating the initial beam of electromagnetic energy into two or more separate beams of electromagnetic energy with each of the separate beams of electromagnetic energy having a predetermined range of wavelengths different from each of the other separate beams of electromagnetic energy.

37. A system as described in claim 35 further comprising the step of means for adjusting the magnitude of at least one of the separate beams of electromagnetic energy.

38. A system for producing a modulated beam of light comprising:

[a] means for producing an initial beam of light having a predetermined range of wavelengths and having a substantially uniform flux intensity substantially across the initial beam of light;

[b] means for separating the initial beam of light into two or more separate beams of light, each of the separate beams of light having a selected predetermined orientation of a chosen component of electric field vectors;

[c] means for altering the selected predetermined orientation of the chosen component of the electric field vectors of a plurality of portions of each of the separate beams of light by passing the plurality of portions of each of the separate beams of light through a respective one of a plurality of altering means whereby the selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the separate beams of light is altered in

response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of each of the substantially separate beams of electromagnetic energy passes through the respective one of the plurality of means for altering the selected predetermined orientation of the chosen component of the electric field vectors;

[d] means for combining the altered separate beams of light into a single collinear beam of light without substantially changing the altered selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the separate beams of light; and

[e] means for resolving from the single collinear beam of light a first resolved beam of light having substantially a first selected predetermined orientation of a chosen component of electric field vectors and a second resolved beam of light having substantially a second selected predetermined orientation of a chosen component of electric field vectors, whereby the first and second selected predetermined orientation of the chosen component of the electric field vectors are different from one another.

39. A system as described in claim 38 wherein the means for producing an initial beam includes means for producing the initial beam of light with randomly chancing orientations of a selected component of the electric field vectors, and the means for separating the initial beam includes means for separating the initial beam of light into two or more separate beams of light whereby each of the separate beams of light has substantially the same selected predetermined orientation of the chosen component of the electric field vectors substantially across each of the separate beams of light as that of the other separate beams of light.

40. A system as described in claim 38 wherein the means for producing an initial beam includes means far producing the initial beam of light with substantially the same selected predetermined orientation for the chosen component of the electric field vectors substantially across the beam.

41. A system as described in claim 38 including means for substantially

collimating each beam of light.

42. A system as described in claim 38 wherein the means for producing an initial beam includes means for producing the initial beam of light with a rectangular cross sectional area and substantially the same selected predetermined orientation for the chosen component of the electric field vectors substantially across the beam.

43. A system as described in claim 38 further comprising means for passing one of the resolved beams of light to a projection means.

44. A system as described in claim 38 further comprising means for adjusting the light spectrum of at least one of the separate beams of light.

45. A system as described in claim 44 wherein the means for adjusting the light spectrum of at least one of the separate beams of light includes means for adjusting the predetermined range of wavelengths of at least one of the separate beams of light.

46. A system as described in claim 44 wherein the means for adjusting the light spectrum of at least one of the separate beams of light includes means for adjusting the magnitude of at least one of the separate beams of light.

47. A system as described in claim 38 wherein the means for separating the initial beam of light into two or more separate beams of light further includes means for separating the initial beam of light into two or more separate beams of light with each of the separate beams of light having a light spectrum different from each of the other separate beams of light.

48. A system as described in claim 47 wherein the means for separating the initial beam of light into two or more separate beams of light further includes means for separating the initial beam of light into two or more separate beams of light with each of the separate beams of light having a predetermined range of wavelengths different from each of the other separate beams of light.

49. A system as described in claim 47 further comprising the means for adjusting the magnitude of at least one of the separate beams of light.

50. A system as described in claim 26 wherein the means for producing an initial beam of electromagnetic energy includes means for producing an initial beam of ultraviolet.

51. A method of producing a modulated beam of electromagnetic energy, comprising:

[a] providing a substantially collimated primary beam of electromagnetic energy having a predetermined range of wavelengths;

[b] resolving from the substantially collimated primary beam of electromagnetic energy a substantially collimated primary first resolved beam of electromagnetic energy having substantially a first selected predetermined orientation of a chosen component of the electromagnetic wave field vectors and a substantially collimated primary second resolved beam of electromagnetic energy having substantially a second selected predetermined orientation of a chosen component of the electromagnetic wave field vectors, whereby the first and second selected predetermined orientation of the chosen component of the electromagnetic wave field vectors are different from one another;

[c] forming from the substantially collimated primary first resolved beam of electromagnetic energy and the substantially collimated primary second resolved beam of electromagnetic energy a substantially collimated initial beam of electromagnetic energy having substantially the same selected predetermined orientation of a chosen component of electromagnetic wave field vectors substantially across the substantially collimated initial beam of electromagnetic energy and a substantially uniform flux intensity substantially across the substantially collimated initial beam of electromagnetic energy;

[d] separating the substantially collimated initial beam of electromagnetic energy into two or more substantially collimated separate beams of electromagnetic energy, each of the substantially collimated separate beams of electromagnetic energy

having a selected predetermined orientation of a chosen component of electromagnetic wave field vectors;

[e] altering the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of a plurality of portions of each of the substantially collimated separate beams of electromagnetic energy by passing the plurality of portions of each of the substantially collimated separate beams of electromagnetic energy through a respective one of a plurality of altering means whereby the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the plurality of portions of each of the substantially collimated separate beams of electromagnetic energy is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of each of the substantially collimated separate beams of electromagnetic energy passes through the respective one of the plurality of means for altering the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors;

[f] combining the substantially collimated altered separate beams of electromagnetic energy into a substantially collimated single collinear beam of electromagnetic energy without substantially changing the altered selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the plurality of portions of each of the substantially collimated separate beams of electromagnetic energy; and

[g] resolving from the substantially collimated single collinear beam of electromagnetic energy a substantially collimated first resolved beam of electromagnetic energy having substantially a first selected predetermined orientation of a chosen component of electromagnetic wave field vectors and a substantially collimated second resolved beam of electromagnetic energy having substantially a second selected predetermined orientation of a chosen component of electromagnetic wave field vectors, whereby the first and second selected predetermined orientation of the chosen component of the electromagnetic wave field vectors are different from one another.

52. A method as described in claim 51 wherein step [d] includes separating the

substantially collimated initial beam of electromagnetic energy into two or more substantially collimated separate beams of electromagnetic energy whereby each of the substantially collimated separate beams of electromagnetic energy has substantially the same selected predetermined orientation of the chosen component of the electromagnetic wave field vectors substantially across each of the substantially collimated separate beams of electromagnetic energy as that of the other substantially collimated separate beams of electromagnetic energy.

53. A method as described in claim 52 wherein step [c] includes forming the substantially collimated initial beam of electromagnetic energy further having a rectangular cross sectional area.

54. A method as described in claim 53 further comprising the step of passing one of the substantially collimated resolved beams of electromagnetic energy to a projection means.

55. A method as described in claim 52 further comprising the step of adjusting the electromagnetic spectrum of at least one of the substantially collimated separate beams of electromagnetic energy.

56. A method as described in claim 55 wherein the step of adjusting the electromagnetic spectrum of at least one of the substantially collimated separate beams of electromagnetic energy includes adjusting a predetermined range of wavelengths of at least one of the substantially collimated separate beams of electromagnetic energy.

57. A method as described in claim 55 wherein the step of adjusting the electromagnetic spectrum of at least one of the substantially collimated separate beams of electromagnetic energy includes adjusting a magnitude of at least one of the substantially collimated separate beams of electromagnetic energy.

58. A method as described in claim 51 wherein step [d] includes separating the

substantially collimated initial beam of electromagnetic energy into two or more substantially collimated separate beams of electromagnetic energy whereby each of the substantially collimated separate beams of electromagnetic energy has a substantially different selected predetermined orientation of the chosen component of the electromagnetic wave field vectors substantially across each of the substantially collimated separate beams of electromagnetic energy from that of the other substantially collimated separate beams of electromagnetic energy.

59. A method as described in claim 52 further comprising the step of passing one of the substantially collimated primary resolved beams of electromagnetic energy through a means for changing the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors.

60. A method as described in claim 59 wherein the step of passing one of the substantially collimated primary resolved beams of electromagnetic energy through a means for changing the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors includes passing one of the substantially collimated primary resolved beams of electromagnetic energy through a liquid crystal device for changing the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors.

61. A method as described in claim 52 further comprising the step of passing one of the substantially collimated primary resolved beams of electromagnetic energy through a means for changing a selected predetermined orientation of a chosen component of electromagnetic wave field vectors and changing the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of one of the substantially collimated primary resolved beam of electromagnetic energy to match substantially the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the other substantially collimated primary resolved beam of electromagnetic energy.

62. A method as described in claim 52 wherein step [c] further comprises the step

of providing one or more reflecting means, each of the reflecting means having means for changing the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors, and reflecting one of the substantially collimated primary resolved beams of electromagnetic energy from one or more of the reflecting means.

63. A method as described in claim 62 wherein the step of providing one or more reflecting means, each of the reflecting means including one or more planar reflecting surface with a dielectric coating, each planar reflecting surface with a dielectric coating having means for changing the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors, and reflecting one of the substantially collimated primary resolved beams of electromagnetic energy from one or more of the planar reflecting surfaces with a dielectric coating.

64. A method as described in claim 62 wherein the step of providing one or more reflecting means, each of the reflecting means including a mirror having a thin film dielectric material, each mirror having a thin film dielectric material having means for changing the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors, and reflecting one of the substantially collimated primary resolved beams of electromagnetic energy from one or more of the mirrors having a thin film dielectric material.

65. A method as described in claim 52 wherein step [a] includes providing a substantially collimated primary beam of electromagnetic energy further having a substantially uniform flux intensity across substantially the entire primary beam of electromagnetic energy.

66. A method as described in claim 52 further comprising the step of removing from at least one of the beams of electromagnetic energy at least a predetermined portion of a predetermined range of wavelengths.

67. A method as described in claim 66 further including directing the removed

portions to an absorption means.

68. A method as described in claim 52 further comprising the step of removing from the substantially collimated primary beam of electromagnetic energy at least a predetermined portion of a predetermined range of wavelengths and directing the removed portions to an absorption means.

69. A method of producing a modulated beam of light, comprising:

[a] providing a substantially collimated primary beam of light having a predetermined range of wavelengths;

[b] resolving from the substantially collimated primary beam of light a substantially collimated primary first resolved beam of light having substantially a first selected predetermined orientation of a chosen component of the electric field vectors and a substantially collimated primary second resolved beam of light having substantially a second selected predetermined orientation of a chosen component of the electric field vectors, whereby the first and second selected predetermined orientation of the chosen component of the electric field vectors are different from one another;

[c] forming from the substantially collimated primary first resolved beam of light and the substantially collimated primary second resolved beam of light a substantially collimated initial beam of light having a substantially the same selected predetermined orientation of a chosen component of electric field vectors substantially across the substantially collimated initial beam of light and a substantially uniform flux intensity substantially across the substantially collimated initial beam of light;

[d] separating the substantially collimated initial beam of light into two or more substantially collimated separate beams of light, each of the substantially collimated separate beams of light having a selected predetermined orientation of a chosen component of electric field vectors;

[e] altering the selected predetermined orientation of the chosen component of the electric field vectors of a plurality of portions of each of the substantially collimated separate beams of light by passing the plurality of portions of

each of the substantially collimated separate beams of light through a respective one of a plurality of altering means whereby the selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the substantially collimated separate beams of light is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of each of the substantially collimated separate beams of electromagnetic energy passes through the respective one of the plurality of means for altering the selected predetermined orientation of the chosen component of the electric field vectors;

[f] combining the substantially collimated altered separate beams of light into a substantially collimated single collinear beam of light without substantially changing the altered selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the substantially collimated separate beams of light; and

[g] resolving from the substantially collimated single collinear beam of light a substantially collimated first resolved beam of light having substantially a first selected predetermined orientation of a chosen component of electric field vectors and a substantially collimated second resolved beam of light having substantially a second selected predetermined orientation of a chosen component of electric field vectors, whereby the first and second selected predetermined orientation of the chosen component of the electric field vectors are different from one another.

70. A method as described in claim 69 wherein step [d] includes separating the substantially collimated initial beam of light into two or more substantially collimated separate beams of light whereby each of the substantially collimated separate beams of light has substantially the same selected predetermined orientation of the chosen component of the electric field vectors substantially across each of the substantially collimated separate beams of light as that of the other substantially collimated separate beams of light.

71. A method as described in claim 70 wherein step [c] includes forming the substantially collimated initial beam of light further having a rectangular cross

sectional area.

72. A method as described in claim 71 further comprising the step of passing one of the substantially collimated resolved beams of light to a projection means.

73. A method as described in claim 70 further comprising the step of adjusting the light spectrum of at least one of the substantially collimated separate beams of light.

74. A method as described in claim 73 wherein the step of adjusting the light spectrum of at least one of the substantially collimated separate beams of light includes adjusting a predetermined range of wavelengths of at least one of the substantially collimated separate beams of light.

75. A method as described in claim 73 wherein the step of adjusting the light spectrum of at least one of the substantially collimated separate beams of light includes adjusting the magnitude of at least one of the substantially collimated separate beams of light.

76. A method as described in claim 69 wherein step [d] includes separating the substantially collimated initial beam of light into two or more substantially collimated separate beams of light whereby each of the substantially collimated separate beams of light has a substantially different selected predetermined orientation of the chosen component of the electric field vectors substantially across each of the substantially collimated separate beams of light as that of the other substantially collimated separate beams of light.

77. A method as described in claim 70 further comprising the step of passing one of the substantially collimated primary resolved beams of light through a means for changing the selected predetermined orientation of the chosen component of the electric field vectors.

78. A method as described in claim 77 wherein the step of passing one of the

substantially collimated primary resolved beams of light through a means for changing the selected predetermined orientation of the chosen component of the electric field vectors includes passing one of the substantially collimated primary resolved beams of light through a liquid crystal device for changing the selected predetermined orientation of the chosen component of the electric field vectors.

79. A method as described in claim 70 further comprising the step of passing one of the substantially collimated primary resolved beams of light through a means for changing a selected predetermined orientation of a chosen component of electric field vectors and changing the selected predetermined orientation of the chosen component of the electric field vectors of one of the substantially collimated primary resolved beam of light to match substantially the selected predetermined orientation of the chosen component of the electric field vectors of the other substantially collimated primary resolved beam of light.

80. A method as described in claim 70 wherein step [c] further comprises the step of providing one or more reflecting means, each of the reflecting means having means for changing the selected predetermined orientation of the chosen component of the electric field vectors, and reflecting one of the substantially collimated primary resolved beams of light from one or more of the reflecting means.

81. A method as described in claim 80 wherein the step of providing one or more reflecting means, each of the reflecting means including one or more planar reflecting surface with a dielectric coating, each planar reflecting surface with a dielectric coating having means for changing the selected predetermined orientation of the chosen component of the electric field vectors, and reflecting one of the substantially collimated primary resolved beams of light from one or more of the planar reflecting surfaces with a dielectric coating.

82. A method as described in claim 80 wherein the step of providing one or more reflecting means, each of the reflecting means including a mirror having a thin film dielectric material, each mirror having a thin film dielectric material having means for

changing the selected predetermined orientation of the chosen component of the electric field vectors, and reflecting one of the substantially collimated primary resolved beams of light from one or more of the mirrors having a thin film dielectric material.

83. A method as described in claim 70 wherein step [a] includes providing a substantially collimated primary beam of light further having a substantially uniform flux intensity across substantially the entire primary beam of light.

84. A method as described in claim 70 further comprising the step of removing from one or more of the beams of light at least a predetermined portion of a predetermined range of wavelengths.

85. A method as described in claim 84 further including directing the removed portions to an absorption means.

86. A method as described in claim 70 further comprising the step of removing from the substantially collimated primary beam of light at least a predetermined portion of a predetermined range of wavelengths and directing the removed portions to an absorption means.

87. A method as described in claim 51 wherein step [a] includes producing a primary beam of ultraviolet.

88. A system of producing a modulated beam of electromagnetic energy, comprising:

[a] means for providing a substantially collimated primary beam of electromagnetic energy having a predetermined range of wavelengths;

[b] means for resolving from the substantially collimated primary beam of electromagnetic energy a substantially collimated primary first resolved beam of electromagnetic energy having substantially the first selected predetermined orientation of a chosen component of the electromagnetic wave field vectors and a

substantially collimated primary second resolved beam of electromagnetic energy having substantially a second selected predetermined orientation of a chosen component of the electromagnetic wave field vectors, whereby the first and second selected predetermined orientation of the chosen component of the electromagnetic wave field vectors are different from one another;

[c] means for forming from the substantially collimated primary first resolved beam of electromagnetic energy and the substantially collimated primary second resolved beam of electromagnetic energy a substantially collimated initial beam of electromagnetic energy having substantially the same selected predetermined orientation of a chosen component of electromagnetic wave field vectors substantially across the substantially collimated initial beam of electromagnetic energy and a substantially uniform flux intensity substantially across the substantially collimated initial beam of electromagnetic energy;

[d] means for separating the substantially collimated initial beam of electromagnetic energy into two or more substantially collimated separate beams of electromagnetic energy, each of the substantially collimated separate beams of electromagnetic energy having a selected predetermined orientation of a chosen component of electromagnetic wave field vectors;

[e] means for altering the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of a plurality of portions of each of the substantially collimated separate beams of electromagnetic energy by passing the plurality of portions of each of the substantially collimated separate beams of electromagnetic energy through a respective one of a plurality of altering means whereby the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the plurality of portions of each of the substantially collimated separate beams of electromagnetic energy is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of each of the substantially collimated separate beams of electromagnetic energy passes through the respective one of the plurality of means for means for altering the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors;

[f] means for combining each of the substantially collimated altered separate beams of electromagnetic energy with the other substantially collimated altered separate beams of electromagnetic energy into a substantially collimated single collinear beam of electromagnetic energy without substantially changing the altered selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the plurality of portions of each of the substantially collimated separate beams of electromagnetic energy; and

[g] means for resolving from the substantially collimated single collinear beam of electromagnetic energy a substantially collimated first resolved beam of electromagnetic energy having substantially a first selected predetermined orientation of a chosen component of electromagnetic wave field vectors and a substantially collimated second resolved beam of electromagnetic energy having substantially a second selected predetermined orientation of a chosen component of electromagnetic wave field vectors, whereby the first and second selected predetermined orientation of the chosen component of the electromagnetic wave field vectors are different from one another.

89. A system as described in claim 88 wherein step [d] includes means for separating the substantially collimated initial beam of electromagnetic energy into two or more substantially collimated separate beams of electromagnetic energy whereby each of the substantially collimated separate beams of electromagnetic energy has substantially the same selected predetermined orientation of the chosen component of the electromagnetic wave field vectors substantially across each of the substantially collimated separate beams of electromagnetic energy as that of the other substantially collimated separate beams of electromagnetic energy.

90. A system as described in claim 89 wherein step [c] includes means for forming the substantially collimated initial beam of electromagnetic energy further having a rectangular cross sectional area.

91. A system as described in claim 90 further comprising the step of means for passing one of the substantially collimated resolved beams of electromagnetic energy

from step [g] to a projection means.

92. A system as described in claim 89 further comprising the step of means for adjusting the electromagnetic spectrum of at least one of the substantially collimated separate beams of electromagnetic energy.

93. A system as described in claim 92 wherein the step of means for adjusting the electromagnetic spectrum of at least one of the substantially collimated separate beams of electromagnetic energy includes means for adjusting a predetermined range of wavelengths of at least one of the substantially collimated separate beams of electromagnetic energy.

94. A system as described in claim 92 wherein the step of means for adjusting the electromagnetic spectrum of at least one of the substantially collimated separate beams of electromagnetic energy includes means for adjusting a magnitude of at least one of the substantially collimated separate beams of electromagnetic energy.

95. A system as described in claim 88 wherein step [d] includes means for separating the substantially collimated initial beam of electromagnetic energy into two or more substantially collimated separate beams of electromagnetic energy whereby each of the substantially collimated separate beams of electromagnetic energy has a substantially different selected predetermined orientation of the chosen component of the electromagnetic wave field vectors substantially across each of the substantially collimated separate beams of electromagnetic energy as that of the other substantially collimated separate beams of electromagnetic energy.

96. A system as described in claim 89 further comprising the step of means for passing one of the substantially collimated primary resolved beams of electromagnetic energy through a means for changing the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors.

97. A system as described in claim 96 wherein the step of means for passing one

of the substantially collimated primary resolved beams of electromagnetic energy through a means for changing the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors includes means for passing one of the substantially collimated primary resolved beams of electromagnetic energy through a liquid crystal device for changing the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors.

98. A system as described in claim 89 further comprising the step of means for passing one of the substantially collimated primary resolved beams of electromagnetic energy through a means for changing a selected predetermined orientation of a chosen component of electromagnetic wave field vectors and changing the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of one of the substantially collimated primary resolved beam of electromagnetic energy to match substantially the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the other substantially collimated primary resolved beam of electromagnetic energy.

99. A system as described in claim 98 wherein step [c] further comprises the step of means for reflecting one of the substantially collimated primary resolved beams of electromagnetic energy from one or more reflecting means, each of the reflecting means having means for changing the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors.

100. A system as described in claim 98 wherein the step of means for reflecting one of the substantially collimated primary resolved beams of electromagnetic energy from one or more reflecting means, each of the reflecting means having means for changing the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors includes means for reflecting one of the substantially collimated primary resolved beams of electromagnetic energy from one or more planar reflecting surface with a dielectric coating, each planar reflecting surface with a dielectric coating having means for changing the selected

predetermined orientation of the chosen component of the electromagnetic wave field vectors.

101. A system as described in claim 99 wherein the step of means for reflecting one of the substantially collimated primary resolved beams of electromagnetic energy from one or more reflecting means, each of the reflecting means having means for changing the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors includes means for reflecting one of the substantially collimated primary resolved beams of electromagnetic energy from one or more mirrors having a thin film dielectric material, each mirrors having a thin film dielectric material having means for changing the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors.

102. A system as described in claim 99 wherein step [a] includes the substantially collimated primary beam of electromagnetic energy further having a substantially uniform flux intensity across substantially the entire primary beam of electromagnetic energy.

103. A system as described in claim 99 further comprising the step of means for removing from at least one of the beams of electromagnetic energy at least a predetermined portion of a predetermined range of wavelengths.

104. A system as described in claim 103 further including directing the removed portions to an absorption means.

105. A system as described in claim 89 further comprising the step of means for removing from the substantially collimated primary beam of electromagnetic energy at least a predetermined portion of a predetermined range of wavelengths and directing the removed portions to an absorption means.

106. A system of producing a modulated beam of light, comprising:

[a] means for providing a substantially collimated primary beam of light having a predetermined range of wavelengths;

[b] means for resolving from the substantially collimated primary beam of light--a substantially collimated primary first resolved beam of light having substantially a first selected predetermined orientation of a chosen component of the electric field vectors and a substantially collimated primary second resolved beam of light having substantially a second selected predetermined orientation of a chosen component of the electric field vectors, whereby the first and second selected predetermined orientation of the chosen component of the electric field vectors are different from one another;

[c] means for forming from the substantially collimated primary first resolved beam of light and the substantially collimated primary second resolved beam of light a substantially collimated initial beam of light having substantially the same selected predetermined orientation of a chosen component of electric field vectors substantially across the substantially collimated initial beam of light and a substantially uniform flux intensity substantially across the substantially collimated initial beam of light;

[d] means for separating the substantially collimated initial beam of light into two or more substantially collimated separate beams of light, each of the substantially collimated separate beams of light having a selected predetermined orientation of a chosen component of electric field vectors;

[e] means for altering the selected predetermined orientation of the chosen component of the electric field vectors of a plurality of portions of each of the substantially collimated separate beams of light by passing the plurality of portions of each of the substantially collimated separate beams of light through a respective one of a plurality of altering means whereby the selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the substantially collimated separate beams of light is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of each of the substantially collimated separate beams of electromagnetic energy passes through the respective one of the plurality of means for

altering the selected predetermined orientation of the chosen component of the electric field vectors;

[f] means for combining the substantially collimated altered separate beams of light into a substantially collimated single collinear beam of light without substantially changing the altered selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the substantially collimated separate beams of light; and

[g] means for resolving from the substantially collimated single collinear beam of light a substantially collimated first resolved beam of light having substantially a first selected predetermined orientation of a chosen component of electric field vectors and a substantially collimated second resolved beam of light having substantially a second selected predetermined orientation of a chosen component of electric field vectors, whereby the first and second selected predetermined orientation of the chosen component of the electric field vectors are different from one another.

107. A system as described in claim 106 wherein the means for separating the substantially collimated initial beam of light into two or more substantially collimated separate beams of light includes means for producing two or more substantially collimated separate beams of light each having substantially the same selected predetermined orientation of the chosen component of the electric field vectors substantially across each of the substantially collimated separate beams of light as that of the other substantially collimated separate beam or beams of light.

108. A system as described in claim 107 wherein the means for forming the substantially collimated initial beam of light further includes means for forming the substantially collimated initial beam having a rectangular cross sectional area.

109. A system as described in claim 108 further comprising means for passing one of the substantially collimated resolved beams of light to a projection means.

110. A system as described in claim 107 further comprising means for adjusting the

light spectrum of at least one of the substantially collimated separate beams of light.

111. A system as described in claim 110 wherein means for adjusting the light spectrum of at least one of the substantially collimated separate beams of light includes means for adjusting a predetermined range of wavelengths of at least one of the substantially collimated separate beams of light.

112. A system as described in claim 110 wherein means for adjusting the light spectrum of at least one of the substantially collimated separate beams of light includes means for adjusting the magnitude of at least one of the substantially collimated separate beams of light.

113. A system as described in claim 106 wherein the means for separating the substantially collimated initial beam of light into two or more substantially collimated separate beams of light includes means for producing two or more substantially collimated separate beams of light each having a substantially different selected predetermined orientation of the chosen component of the electric field vectors substantially across each of the substantially collimated separate beams of light as that of the other substantially collimated separate beam or beams of light.

114. A system as described in claim 107 further comprising means for passing one of the substantially collimated primary resolved beams of light through a means for changing the selected predetermined orientation of the chosen component of the electric field vectors.

115. A system as described in claim 114 wherein means for passing one of the substantially collimated primary resolved beams of light through a means for changing the selected predetermined orientation of the chosen component of the electric field vectors includes means for passing one of the substantially collimated primary resolved beams of light through a liquid crystal device for changing the selected predetermined orientation of the chosen component of the electric field vectors.

116. A system as described in claim 107 further comprising means for passing one of the substantially collimated primary resolved beams of light through a means for changing the selected predetermined orientation of a chosen component of electric field vectors and changing the selected predetermined orientation of the chosen component of the electric field vectors of one of the substantially collimated primary resolved beam of light to match substantially the selected predetermined orientation of the chosen component of the electric field vectors of the other substantially collimated primary resolved beam of light.

117. A system as described in claim 107 wherein the means for forming the substantially collimated primary first resolved beam and second resolved beam includes means for reflecting one of the substantially collimated primary resolved beams of light from one or more reflecting means, each of the reflecting means having means for changing the selected predetermined orientation of the chosen component of the electric field vectors.

118. A system as described in claim 117 wherein means for reflecting one of the substantially collimated primary resolved beams of light from one or more reflecting means, each of the reflecting means having means for changing the selected predetermined orientation of the chosen component of the electric field vectors, includes means for reflecting one of the substantially collimated primary resolved beams of light from one or more planar reflecting surfaces having a dielectric coating, each planar reflecting surface having a dielectric coating including means for changing the selected predetermined orientation of the chosen component of the electric field vectors.

119. A system as described in claim 117 wherein the means for reflecting one of the substantially collimated primary resolved beams of light from one or more reflecting means, each of the reflecting means having means for changing the selected predetermined orientation of the chosen component of the electric field vectors, includes means for reflecting one of the substantially collimated primary resolved

beams of light from one or more mirrors having a thin film dielectric material, each mirror having a thin film dielectric material including means for changing the selected predetermined orientation of the chosen component of the electric field vectors.

120. A system as described in claim 107 wherein the means for providing a substantially collimated primary beam of light includes means for providing a substantially collimated primary beam of light having a substantially uniform flux intensity across substantially the entire primary beam of light.

121. A system as described in claim 107 further comprising means for removing from at least one of the beams of light at least a predetermined portion of a predetermined range of wavelengths.

122. A system as described in claim 121 further comprising means for directing the removed portions to an absorption means.

123. A system as described in claim 107 further comprising means for removing from the substantially collimated primary beam of light at least a predetermined portion of a predetermined range of wavelengths and directing the removed portions to an absorption means.

124. A system as described in claim 88 wherein the means for providing a substantially collimated primary beam includes producing a primary beam of ultraviolet.

125. A method of displaying an image, comprising:

[a] providing an illumination subsystem including producing a primary beam of light having a predetermined range of wavelengths, randomly changing orientations of a chosen component of electric field vectors, and a substantially uniform flux intensity substantially across the initial beam of light;

[b] providing a modulation subsystem, including;

[i] separating the primary beam of light into two or more primary color beams of light, each of the primary color beams having the same selected predetermined orientation of a chosen component of electric field vectors as that of the other primary color beams;

[ii] providing two or more altering means for changing the selected predetermined orientation of a chosen component of electric field vectors;

[iii] altering the selected predetermined orientation of the chosen component of the electric field vectors of a plurality of portions of each of the separate primary color beams of light by passing the plurality of portions of each of the separate primary color beam or beams of light through a respective one of a plurality of altering means whereby the selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the separate primary color beams of light is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of each of the separate primary color beams of light passes through the respective one of the plurality of means for altering the selected predetermined orientation of the chosen component of the electric field vectors;

[iv] combining the altered separate primary color beams of light into a single collinear beam of light without substantially changing the altered selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the separate beams of light;

[v] resolving from the single collinear beam of light a first resolved beam of light having substantially a first selected predetermined orientation of a chosen component of electric field vectors and a second resolved beam of light having substantially a second selected predetermined orientation of a chosen component of electric field vectors, whereby the first and second selected predetermined orientation of the chosen component of the electric field vectors are different from one another;

[c] providing a projection subsystem and passing at least one of the resolved beams of light thereto; and

[d] [i] forming a first light path from the illumination subsystem to the altering means in which the first light path is equal for all altering means; and

[ii] forming a second light path from each of the altering means to the projection subsystem in which the second light path is equal for all altering means.

126. A method as described in claim 125 wherein step [a] includes forming the primary beam of light further having a rectangular cross sectional area.

127. A display system, comprising:

[a] an illumination subsystem including means for producing a primary beam of light having a predetermined range of wavelengths, randomly changing orientations of a chosen component of electric field vectors, and a substantially uniform flux intensity substantially across the initial beam of light;

[b] a modulation subsystem, including;

[i] means for separating the primary beam of light into two or more primary color beams of light, each of the primary color beams having the same selected predetermined orientation of a chosen component of electric field vectors as that of the other primary color beams;

[ii] two or more altering means for changing the selected predetermined orientation of a chosen component of electric field vectors;

[iii] means for passing the plurality of portions of each of the separate primary color beams of light through a respective one of the altering means whereby the selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the separate primary color beams of light is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of each of the separate primary color beams of light passes through the respective one of the plurality of means for altering the selected predetermined orientation of the chosen component of the electric field vectors;

[iv] means for combining the altered separate primary color beams of light into a single collinear beam of light without substantially changing the altered selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the separate beams of light;

[v] means for resolving from the single collinear beam of light a first resolved beam of light having substantially a first selected predetermined orientation of a chosen component of electric field vectors and a second resolved beam of light having substantially a second selected predetermined orientation of a chosen component of electric field vectors, whereby the first and second selected predetermined orientation of the chosen component of the electric field vectors are different from one another;

[c] a projection subsystem and means for passing at least one of the resolved beams from the single collinear beam of light thereto;

[d] [i] each altering means being disposed at a first path length from the illumination subsystem, the first path length being equal for each of the altering means; and

[ii] each of the altering means being disposed at a second path length from the projection subsystem, the second path length being equal for each of the altering means.

128. A system as described in claim 127 wherein the illumination subsystem includes means for including a the primary beam of light further having a rectangular cross sectional area.

129. A method for displaying an image projected from a liquid crystal device which includes a first liquid crystal light valve, a second liquid crystal light valve and a third liquid crystal light valve, comprising:

[a] producing a primary beam of light having a predetermined range of wavelengths, randomly changing orientations of a chosen component of electric field vectors, and a substantially uniform flux intensity substantially across the initial beam of light;

[b] separating the primary beam of light into two or more primary color beams of light, each of the primary color beams having the same selected predetermined orientation of a chosen component of electric field vectors as that of the other primary color beam or beams;

[c] forming optical light paths between the light source and the three liquid crystal light valves which are unequal in length and based on luminous intensity of the primary colors associated with respective light valve produced by the light source;

[d] altering the selected predetermined orientation of the chosen component of the electric field vectors of a plurality of portions of each of the separate primary color beams of light by passing the plurality of portions of each of the separate primary color beams of light through a respective one of the liquid crystal light valves whereby the selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the separate primary color beams of light is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of each of the separate primary color beams of light passes through the respective one of the liquid crystal light valves altering the selected predetermined orientation of the chosen component of the electric field vectors;

[e] combining the altered separate primary color beams of light into a single collinear beam of light without substantially changing the altered selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the separate beams of light;

[f] resolving from the single collinear beam of light a first resolved beam of light having substantially a first selected predetermined orientation of a chosen component of electric field vectors and a second resolved beam of light having substantially a second selected predetermined orientation of a chosen component of electric field vectors, whereby the first and second selected predetermined orientation of the chosen component of the electric field vectors are different from one another; and

[g] passing at least one of the resolved beams from the single collinear beam of light to a projection means.

130. A system or displaying an image projected from a liquid crystal device which includes means for a first liquid crystal light valve, a second liquid crystal light valve and a third liquid crystal light valve, comprising:

[a] means for producing a primary beam of light having a predetermined range of wavelengths, randomly changing orientations of a chosen component of electric field vectors, and a substantially uniform flux intensity substantially across the initial beam of light;

[b] means for separating the primary beam of light into two or more primary color beams of light, each of the primary color beams having the same selected predetermined orientation of a chosen component of electric field vectors as that of the other primary color beams;

[c] means for forming the optical light paths between the light source and the three liquid crystal light valves which are unequal in length and based on luminous intensity of the primary colors associated with respective light valve produced by the light source;

[d] means for altering the selected predetermined orientation of the chosen component of the electric field vectors of a plurality of portions of each of the separate primary color beams of light by passing the plurality of portions of each of the separate primary color beams of light through a respective one of the liquid crystal light valves whereby the selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the separate primary color beams of light is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of each of the separate primary color beams of light passes through the respective one of the liquid crystal light valves altering the selected predetermined orientation of the chosen component of the electric field vectors;

[e] means for combining the altered separate primary color beams of light into a single collinear beam of light without substantially changing the altered selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the separate beams of light;

[f] means for resolving from the single collinear beam of light a first resolved beam of light having substantially a first selected predetermined orientation of a chosen component of electric field vectors and a second resolved beam of light having substantially a second selected predetermined orientation of a chosen component of electric field vectors, whereby the first and second selected

predetermined orientation of the chosen component of the electric field vectors are different from one another; and

[g] means for passing at least one of the resolved beams to a projection means.

131. A projection-type color display device, comprising:

[a] means for producing a collimated primary beam of light having a predetermined range of wavelengths, randomly changing orientations of a chosen component of electric field vectors, a substantially uniform flux intensity substantially across the initial beam of light, and a rectangular cross sectional area;

[b] means for separating the collimated primary beam of light into the primary color beams of red, blue and green, each of the primary color beams having the same selected predetermined orientation of a chosen component of electric field vectors as that of the other primary color beams;

[c] means for altering the selected predetermined orientation of the chosen component of the electric field vectors of a plurality of portions of each of the separate primary color beams of red, blue and green by passing the plurality of portions of each of the separate primary color beams of red, blue and green through a respective one of a plurality of liquid crystal light valves whereby the selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the separate primary color beams of red, blue and green is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of each of the separate primary color beams of light passes through the respective one of the liquid crystal light valves altering the selected predetermined orientation of the chosen component of the electric field vectors;

[d] means for combining the altered separate primary color beams into a single collinear beam of light without substantially changing the altered selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the separate beams of red, blue and green by passing the altered separate primary color beams through a color synthesis cube having a

reflecting surface for synthesizing the red, blue and green beams into a single collinear beam of light;

[e] means for resolving from the single collinear beam of light a first resolved beam of light having substantially a first selected predetermined orientation of a chosen component of electric field vectors and a second resolved beam of light having substantially a second selected predetermined orientation of a chosen component of electric field vectors, whereby the first and second selected predetermined orientation of the chosen component of the electric field vectors are different from one another; and

[f] means for passing at least one of the resolved beams to a projection means.

132. A projection apparatus, comprising:

[a] means for producing a primary beam of light having a predetermined range of wavelengths, randomly changing orientations of a chosen component of electric field vectors, a substantially uniform flux intensity substantially across the initial beam of light, and a rectangular cross sectional area;

[b] means for separating the primary beam of light into three primary color beams of light, each of the primary color beams having the same selected predetermined orientation of a chosen component of electric field vectors as that of the other primary color beams;

[c] three means for altering the selected predetermined orientation of the chosen component of the electric field vectors of a plurality of portions of each of the separate primary color beams of light by passing the plurality of portions of each of the separate primary color beams of light through a respective one of the altering means whereby the selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the separate primary color beams of light is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of each of the separate primary color beams of light passes through the respective one of the means for altering the selected predetermined orientation of the chosen component of the electric field vectors;

[d] means for combining the altered separate primary color beams of light into a single collinear beam of light without substantially changing the altered selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the separate beams of light by dichroic reflection surfaces intersecting in X-letter form;

[e] means for resolving from the single collinear beam of light a first resolved beam of light having substantially a first selected predetermined orientation of a chosen component of electric field vectors and a second resolved beam of light having substantially a second selected predetermined orientation of a chosen component of electric field vectors, whereby the first and second selected predetermined orientation of the chosen component of the electric field vectors are different from one another;

[f] means for passing at least one of the resolved beams from the single collinear beam of light to a projection means;

[g] a driving circuit for driving each of the three altering means according to the signal means; wherein the color separating means comprises a first flat-plate type dichroic mirror and a second flat-plate type dichroic mirror intersecting in X-letter form, light paths from the intersecting part to each of the altering means having lengths such that the path of the color light which advances straightly through the color separating means is the shortest, the second dichroic mirror being constructed by two dichroic mirrors separated at the intersecting part so that the dichroic reflecting surfaces of the two dichroic mirrors are placed on mutually different planes to allow two-edge surfaces of the two dichroic mirrors forming the intersecting part to be seen as being at least partially overlapping when the color-separating means is observed from the output light side in a direction along its input light.

133. A method of producing one or more collinear beams of electromagnetic energy, comprising:

[a] producing two or more separate beams of electromagnetic energy, each of the separate beams of electromagnetic energy having the same selected predetermined orientation of a chosen component of electromagnetic wave field vectors substantially across each beam, a predetermined range of wavelengths and a

substantially uniform flux intensity substantially across the beam of electromagnetic energy;

[b] altering the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of a plurality of portions of each of the separate beams of electromagnetic energy by passing the plurality of portions of each of the separate beams of electromagnetic energy through a respective one of a plurality of altering means whereby the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the plurality of portions of each of the separate beams of electromagnetic energy is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of each of the separate beams of electromagnetic energy passes through the respective one of the plurality of means for altering the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors;

[c] combining the altered separate beams of electromagnetic energy into a single collinear beam of electromagnetic energy without substantially changing the altered selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the plurality of portions of each of the separate beams of electromagnetic energy; and

[d] resolving from the single collinear beam of electromagnetic energy a first resolved beam of electromagnetic energy having substantially a first selected predetermined orientation of a chosen component of electromagnetic wave field vectors and a second resolved beam of electromagnetic energy having substantially a second selected predetermined orientation of a chosen component of electromagnetic wave field vectors, whereby the first and second selected predetermined orientation of the chosen component of the electromagnetic wave field vectors are different from one another.

134. A method as described in claim 133 wherein step [a] includes producing each separate beam of electromagnetic energy further having a rectangular cross sectional area.

135. A method as described in claim 133 further comprising the step of passing one of the resolved beams of electromagnetic energy to a projection means.

136. A method as described in claim 133 further comprising the step of adjusting the electromagnetic spectrum of at least one of the separate beams of electromagnetic energy.

137. A method as described in claim 136 wherein the step of adjusting the electromagnetic spectrum of at least one of the separate beams of electromagnetic energy includes adjusting a predetermined range of wavelengths of at least one of the separate beams of electromagnetic energy.

138. A method as described in claim 136 wherein the step of adjusting the electromagnetic spectrum of at least one of the separate beams of electromagnetic energy includes adjusting the magnitude of at least one of the separate beams of electromagnetic energy.

139. A method of producing one or more collinear beams of light, comprising:

[a] producing two or more separate beams of light, each of the separate beams of light having the same selected predetermined orientation of a chosen component of electric field vectors substantially across each beam, a predetermined range of wavelengths and a substantially uniform flux intensity substantially across the beam of light;

[b] altering the selected predetermined orientation of the chosen component of the electric field vectors of a plurality of portions of each of the separate beams of light by passing the plurality of portions of each of the separate beams of light through a respective one of a plurality of altering means whereby the selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the separate beams of light is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of each of the separate beams of light passes through the respective one of the plurality of means for altering the

selected predetermined orientation of the chosen component of the electric field vectors;

[c] combining the altered separate beams of light into a single collinear beam of light without substantially changing the altered selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the separate beams of light; and

[d] resolving from the single collinear beam of light a first resolved beam of light having substantially a first selected predetermined orientation of a chosen component of electric field vectors and a second resolved beam of light having substantially a second selected predetermined orientation of a chosen component of electric field vectors, whereby the first and second selected predetermined orientation of the chosen component of the electric field vectors are different from one another.

140. A method as described in claim 139 wherein step [a] includes producing each separate beam of light further having a rectangular cross sectional area.

141. A method as described in claim 139 further comprising the step of passing one of the resolved beams of light to a projection means.

142. A method as described in claim 139 further comprising the step of adjusting the light spectrum of at least one of the separate beams of light.

143. A method as described in claim 142 wherein the step of adjusting the light spectrum of at least one of the separate beams of light includes adjusting a predetermined range of wavelengths of at least one of the separate beams of light.

144. A method as described in claim 142 wherein the step of adjusting the light spectrum of at least one of the separate beams of light includes adjusting the magnitude of at least one of the separate beams of light.

145. A system of producing one or more collinear beams of electromagnetic energy, comprising:

[a] means for producing two or more separate beams of electromagnetic energy, each of the separate beams of electromagnetic energy having a same selected predetermined orientation of a chosen component of electromagnetic wave field vectors substantially across each beam, a predetermined range of wavelengths and a substantially uniform flux intensity substantially across the beam of electromagnetic energy;

[b] means for altering the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of a plurality of portions of each of the separate beams of electromagnetic energy by passing the plurality of portions of each of the separate beams of electromagnetic energy through a respective one of a plurality of altering means whereby the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the plurality of portions of each of the separate beams of electromagnetic energy is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of each of the separate beams of electromagnetic energy passes through the respective one of the plurality of means for altering the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors;

[c] means for combining the altered separate beams of electromagnetic energy into a single collinear beam of electromagnetic energy without substantially changing the altered selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the plurality of portions of each of the separate beams of electromagnetic energy; and

[d] means for resolving from the single collinear beam of electromagnetic energy a first resolved beam of electromagnetic energy having substantially a first selected predetermined orientation of a chosen component of electromagnetic wave field vectors and a second resolved beam of electromagnetic energy having substantially a second selected predetermined orientation of a chosen component of electromagnetic wave field vectors, whereby the first and second selected predetermined orientation of the chosen component of the electromagnetic wave field vectors are different from one another.

146. A system as described in claim 145 in which the means for providing two or more separate beams of electromagnetic energy includes means for producing each separate beam of electromagnetic energy having a rectangular cross sectional area.

147. A system as described in claim 145 further comprising means for passing one of the resolved beams of electromagnetic energy to a projection means.

148. A system as described in claim 145 further comprising means for adjusting the electromagnetic spectrum of at least one of the separate beams of electromagnetic energy.

149. A system as described in claim 148 in which the means for adjusting the electromagnetic spectrum of at least one of the separate beams of electromagnetic energy includes means for adjusting a predetermined range of wavelengths of at least one of the separate beams of electromagnetic energy.

150. A system as described in claim 148 in which the means for adjusting the electromagnetic spectrum of at least one of the separate beams of electromagnetic energy includes means for adjusting a magnitude of at least one of the separate beams of electromagnetic energy.

151. A system of producing one or more collinear beams of light, comprising:

[a] means for producing two or more separate beams of light, each of the separate beams of light having a same selected predetermined orientation of a chosen component of electric field vectors substantially across each beam, a predetermined range of wavelengths and a substantially uniform flux intensity substantially across the beam of light;

[b] means for altering the selected predetermined orientation of the chosen component of the electric field vectors of a plurality of portions of each of the separate beams of light by passing the plurality of portions of each of the separate beams of light through a respective one of a plurality of altering means whereby the selected predetermined orientation of the chosen component of the electric field

vectors of the plurality of portions of each of the separate beams of light is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of each of the separate beams of light passes through the respective one of the plurality of means for altering the selected predetermined orientation of the chosen component of the electric field vectors;

[c] means for combining the altered separate beams of light into a single collinear beam of light without substantially changing the altered selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the separate beams of light; and

[d] means for resolving from the single collinear beam of light a first resolved beam of light having substantially a first selected predetermined orientation of a chosen component of electric field vectors and a second resolved beam of light having substantially a second selected predetermined orientation of a chosen component of electric field vectors, whereby the first and second selected predetermined orientation of the chosen component of the electric field vectors are different from one another.

152. A system as described in claim 151 in which the means for producing two or more separate beams of light includes means for producing each separate beam of light having a rectangular cross sectional area.

153. A system as described in claim 151 further comprising means for passing one of the resolved beams of light to a projection means.

154. A system as described in claim 151 further comprising means for adjusting the light spectrum of at least one of the separate beams of light.

155. A system as described in claim 154 in which the means for adjusting the light spectrum of at least one of the separate beams of light includes means for adjusting a predetermined range of wavelengths of at least one of the separate beams of light.

156. A system as described in claim 154 in which the means for adjusting the light spectrum of at least one of the separate beams of light includes means for adjusting the magnitude of at least one of the separate beams of light.

157. A method of producing a modulated beam of visible light in which the brightness of the image increases as the distance from the projector lens to a screen increases up to a distance of approximately 10 feet, comprising:

[a] producing a beam of electromagnetic energy having a substantially uniform flux intensity substantially across the entire beam;

[b] separating the beam of electromagnetic energy into two or more separate electromagnetic energy beams, each of the electromagnetic energy beams having a predetermined orientation of electromagnetic wave field vector;

[c] passing a plurality of portions of each separated electromagnetic energy beam through a respective one of a plurality of means for changing the orientation of the electromagnetic wave field vector whereby the orientation of electromagnetic wave field vector of the plurality of portions of the electromagnetic energy beams is altered as same passes through the respective one of the plurality of means for changing the orientation of electromagnetic wave field vector;

[d] combining the separated electromagnetic energy beams into a single collinear beam of electromagnetic energy without changing the altered orientation of the electromagnetic wave field vector of the plurality of portions of the electromagnetic energy beams;

[e] producing two segregated electromagnetic energy beams from the collinear beam, each segregated electromagnetic energy beam having an orientation of electromagnetic wave field vector different from the other electromagnetic energy beam;

[f] locating a projection means such that the distance of the light path between the projection means and each of the plurality of means for changing the orientation of the electromagnetic wave field vector is substantially equal;

[g] passing one of the segregated beams of electromagnetic beams of electromagnetic energy to the projection means;

[h] locating a surface means up to approximately 10 feet of the projection means; and

[i] passing the one of the segregated beams of electromagnetic energy from the projection means to the surface means.

158. A method of producing a modulated beam of light suitable for projection of video images, comprising:

[a] producing an initial beam of light;

[b] separating the initial beam of light into two or more separate beams of colors whereby each separate beam of color has the same single selected predetermined orientation of a chosen component of the electric field vectors as that of the other separate beams of color and each separate beam of color having a color different from the other separate beams of colors;

[c] altering the single selected predetermined orientation of the chosen component of the electric field vectors of a plurality of portions of each separate beam of color by passing a plurality of portions of each separate beam of color through a respective one of a plurality of altering means whereby the single selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each separate beam of color is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of each of the substantially separate beams of electromagnetic energy passes through the respective one of the plurality of means for altering the single selected predetermined orientation of a chosen component of the electric field vectors;

[d] combining altered separate beams of color into a single collinear color beam without substantially changing the altered selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the separate beam of color; and

[e] resolving from the single collinear color beam a first resolved color beam having substantially a first single selected predetermined orientation of a chosen component of the electric field vectors and second resolved color beam having substantially a second single selected predetermined orientation of a chosen

component of the electric field vectors, whereby the first and second single selected predetermined orientation of the chosen component of the electric field vectors are different from one another.

159. A method as described in claim 158 which further comprises the step of passing one of the resolved color beams to a projection means.

160. A method as described in claim 158 in which step [a] includes producing an initial collimated beam of light having a substantially uniform flux intensity across substantially the entire initial collimated beam of light and substantially the same single selected predetermined orientation of a chosen component of the electric field vectors across substantially the entire initial collimated beam of light.

161. A method as described in claim 160 which further includes the step of removing from the initial collimated beam of light at least a portion of ultraviolet and at least a portion of infrared to produce an initial collimated beam of white light and direction the removed portions to a beam stop whereby the removed ultraviolet and infrared is absorbed.

162. A method as described in claim 161 in which step [b] further includes the step of adjusting by removing at least a predetermined portion of color of at least one of the separate collimated beams of color and directing the removed portion to a beam stop whereby the removed portion is absorbed.

163. A method as described in claim 159 in which step [a] includes producing an initial collimated rectangular beam of light having a substantially uniform flux intensity across substantially the entire initial collimated rectangular beam of light and having substantially the same single selected predetermined orientation of a chosen component of the electric field vectors across substantially the entire initial collimated rectangular beam of light.

164. A method as described in claim 163 which further includes the step of

removing from the initial collimated rectangular beam of light at least a portion of ultraviolet and at least a portion of infrared to produce an initial collimated rectangular beam of white light and directing the removed portions to a beam stop whereby the removed ultraviolet and infrared is absorbed.

165. A method as described in claim 164 in which step [b] further includes the step of adjusting by removing at least a predetermined portion of color of at least one of the separate collimated rectangular beams of color and directing the removed portion to a beam stop whereby the removed portion is absorbed.

166. A system of producing a modulated beam of light suitable for projection of video images, comprising:

[a] means for producing an initial beam of light;

[b] means for separating the initial beam of light into two or more separate beams of colors whereby each separate beam of color has the same single selected predetermined orientation of a chosen component of the electric field vectors as that of the other separate beams of color and each separate beam of color having a color different from the other separate beams of colors;

[c] means for altering the single selected predetermined orientation of the chosen component of the electric field vectors of a plurality of portions of each separate beam of color by passing a plurality of portions of each separate beam of color through a respective one of a plurality of altering means whereby the single selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each separate beam of color is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of each of the substantially separate beams of electromagnetic energy passes through the respective one of the plurality of means for altering the single selected predetermined orientation of a chosen component of the electric field vectors;

[d] means for combining altered separate beams of color into a single collinear color beam without substantially changing the altered selected

predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the separate beam of color; and

[e] means for resolving from the single collinear color beam a first resolved color beam having substantially a first single selected predetermined orientation of a chosen component of the electric field vectors and second resolved color beam having substantially a second single selected predetermined, orientation of a chosen component of the electric field vectors, whereby the first and second single selected predetermined orientation of the chosen component of the electric field vectors are different from one another.

167. A system as described in claim 166 which further comprises means for passing one of the resolved color beams to a projection means.

168. A system as described in claim 166 in which the means for producing an initial beam of light includes producing an initial collimated beam of light having a substantially uniform flux intensity across substantially the entire initial collimated beam of light and substantially the same single selected predetermined orientation of a chosen component of the electric field vectors across substantially the entire initial collimated beam of light.

169. A system as described in claim 168 which further includes means for removing from the initial collimated beam of light at least a portion of ultraviolet and at least a portion of infrared to produce an initial collimated beam of white light and means for directing the removed portions to a beam stop whereby the removed ultraviolet and infrared is absorbed.

170. A system as described in claim 169 in which the means for separating the initial beam of light into two or more separate beams of light includes means for adjusting the color by removing at least a predetermined portion of color of at least one of the separate collimated beams of color and directing the removed portion to a beam stop whereby the removed portion is absorbed.

171. A system as described in claim 166 in which the means for producing an initial beam of light includes means for producing an initial collimated rectangular beam of light having a substantially uniform flux intensity across substantially the entire initial collimated rectangular beam of light and having substantially the same single selected predetermined orientation of a chosen component of the electric field vectors across substantially the entire initial collimated rectangular beam of light.

172. A system as described in claim 171 which further includes means for removing from the initial collimated rectangular beam of light at least a portion of ultraviolet and at least a portion of infrared to produce an initial collimated rectangular beam of white light and directing the removed portions to a beam stop whereby the removed ultraviolet and infrared is absorbed.

173. A system as described in claim 172 in which the means for separating the initial beam of light into two or more separate beams of color includes means for adjusting the color by removing at least a predetermined portion of color of at least one of the separate collimated rectangular beams of color and directing the removed portion to a beam stop whereby the removed portion is absorbed.

174. A method of producing a modulated beam of light suitable for projection of video images, comprising:

[a] providing a first initial beam of light having randomly changing orientations of the selected component of the electric field vectors;

[b] integrating the first initial beam of light to form a second initial beam of light having a substantially uniform flux intensity across substantially the entire second initial beam of light;

[c] collimating the second initial beam of light into an initial collimated beam of light having randomly changing orientations of the selected component of the electric field vectors and a substantially uniform flux intensity across substantially the entire second initial beam of light

[d] removing from the initial collimated beam of light at least a portion of ultraviolet and infrared to produce an initial collimated beam of white light and

directing the removed portions to a beam stop whereby the removed portion is absorbed;

[e] resolving from the initial collimated beam of white light an initial collimated first resolved beam of white light having substantially a first single selected predetermined orientation of a chosen component of the electric field vectors and an initial collimated second resolved beam of white light having substantially a second single selected predetermined orientation of a chosen component of the electric field vectors, whereby the first and second single selected predetermined orientation of the chosen component of the electric field vectors are different from one another;

[f] forming from the initial collimated first resolved beam of white light and initial collimated second resolved beam of white light a substantially collimated rectangular initial single beam of white light having substantially the same single selected predetermined orientation of a chosen component of the electric field vectors across substantially the entire beam of light and a substantially uniform flux intensity across substantially the entire initial collimated single beam of white light;

[g] separating the collimated rectangular initial single beam of white light into two or more separate collimated rectangular beams of color whereby each of the separate collimated rectangular beam of color has the same single selected predetermined orientation of a chosen component of the electric field vectors as that of the other separate collimated rectangular beams of colors and each separate collimated rectangular beam of color having a different color from the other separate collimated rectangular beams of colors;

[h] adjusting the color by removing at least a predetermined portion of color of at least one of the separate collimated rectangular beam of colors and directing the removed portion to a beam stop whereby the removed portion is absorbed;

[i] altering the single selected predetermined orientation of the chosen component of the electric field vectors of a plurality of portions of each separate collimated rectangular beam of color by passing a plurality of portions of each separate collimated rectangular beam of color through a respective one of a plurality of altering means whereby the single selected predetermined orientation of the chosen

component of the electric field vectors of the plurality of portions of each separate beam of color is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of each of the substantially collimated separate beams of electromagnetic energy passes through the respective one of the plurality of altering the single selected predetermined orientation of a chosen component of the electric field vectors;

[j] combining the altered separate collimated rectangular beams of color into a single collimated rectangular collinear color beam without substantially changing the altered selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each separate collimated rectangular beam of color;

[k] resolving from the single collimated rectangular collinear color beam a first collimated rectangular resolved color beam having substantially a first single selected predetermined orientation of a chosen component of the electric field vectors and second collimated rectangular resolved color beam having substantially a second single selected predetermined orientation of a chosen component of the electric field vectors, whereby the first and second single selected predetermined orientation of the chosen component of the electric field vectors are different from one another; and

[l] passing one of the first collimated rectangular or second collimated rectangular resolved color beam to a projection means.

175. A system of producing a modulated beam of light suitable for projection of video images, comprising:

[a] means for providing a first initial beam of light having randomly changing orientations of the selected component of the electric field vectors;

[b] means for integrating the first initial beam of light to form a second initial beam of light having a substantially uniform flux intensity across substantially the entire second initial beam of light;

[c] means for collimating the second initial beam of light into an initial collimated beam of light having randomly changing orientations of the selected component of the electric field vectors and a substantially uniform flux intensity across substantially the entire second initial beam of light;

[d] means for removing from the initial collimated beam of light at least a portion of ultraviolet and infrared to produce an initial collimated beam of white light and directing the removed portions to a beam stop whereby the removed portion is absorbed;

[e] means for resolving from the initial collimated beam of white light an initial collimated first resolved beam of white light having substantially a first single selected predetermined orientation of a chosen component of the electric field vectors and an initial collimated second resolved beam of white light having substantially a second single selected predetermined orientation of a chosen component of the electric field vectors, whereby the first and second single selected predetermined orientation of the chosen component of the electric field vectors are different from one another;

[f] means for forming from the initial collimated first resolved beam of white light and initial collimated second resolved beam of white light a substantially collimated rectangular initial single beam of white light having substantially the same single selected predetermined orientation of a chosen component of the electric field vectors across substantially the entire beam of light and a substantially uniform flux intensity across substantially the entire initial collimated single beam of white light;

[g] means for separating the collimated rectangular initial single beam of white light into two or more separate collimated rectangular beams of color whereby each of the separate collimated rectangular beam of color has the same single selected predetermined orientation of a chosen component of the electric field vectors as that of the other separate collimated rectangular beams of colors and each separate collimated rectangular beam of color having a different color from the other separate collimated rectangular beams of colors;

[h] means for adjusting the color by removing at least a predetermined portion of color of at least one of the separate collimated rectangular beam of colors and directing the removed portion to a beam stop whereby the removed portion is absorbed;

[i] means for altering the single selected predetermined orientation of the chosen component of the electric field vectors of a plurality of portions of each separate collimated rectangular beam of color by passing a plurality of portions of

each separate collimated rectangular beam of color through a respective one of a plurality of altering means whereby the single selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each separate beam of color is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of each of the substantially collimated separate beams of electromagnetic energy passes through the respective one of the plurality of altering the single selected predetermined orientation of a chosen component of the electric field vectors;

[j] means for combining the altered separate collimated rectangular beams of color into a single collimated rectangular collinear color beam without substantially changing the altered selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each separate collimated rectangular beam of color;

[k] means for resolving from the single collimated rectangular collinear color beam a first collimated rectangular resolved color beam having substantially a first single selected predetermined orientation of a chosen component of the electric field vectors and second collimated rectangular resolved color beam having substantially a second single selected predetermined orientation of a chosen component of the electric field vectors, whereby the first and second single selected predetermined orientation of the chosen component of the electric field vectors are different from one another; and

[l] means for passing one of the first collimated rectangular or second collimated rectangular resolved color beam to a projection means.

176. A method of producing a collinear beam of electromagnetic energy having two constituent parts, comprising:

[a] providing a substantially collimated primary beam of electromagnetic energy having a predetermined range of wavelengths and randomly changing orientations of a chosen component of electromagnetic wave field vectors;

[b] resolving the substantially collimated primary beam of electromagnetic energy into a substantially collimated primary first resolved beam of electromagnetic energy having substantially a first selected predetermined orientation of a chosen

component of the electromagnetic wave field vectors and a substantially collimated primary second resolved beam of electromagnetic energy having substantially a second selected predetermined orientation of a chosen component of the electromagnetic wave field vectors;

[c] separating each of the substantially collimated primary resolved beams of electromagnetic energy into two or more substantially collimated separate beams of electromagnetic energy, each of the substantially collimated separate beams of electromagnetic energy having a selected predetermined orientation of a chosen component of electromagnetic wave field vectors;

[d] altering the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of a plurality of portions of each of the substantially collimated separate beams of electromagnetic energy by passing the plurality of portions of each of the substantially collimated separate beams of electromagnetic energy through a respective one of a plurality of altering means whereby the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the plurality of portions of each of the substantially collimated separate beams of electromagnetic energy is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of each of the substantially collimated separate beams of electromagnetic energy passes through the respective one of the plurality of means for altering the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors;

[e] [i] combining the substantially collimated altered separate beams of electromagnetic energy of the primary first resolved beam of electromagnetic energy into a first substantially collimated single collinear beam of electromagnetic energy without substantially changing the altered selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the plurality of portions of each of the substantially collimated separate beams of electromagnetic energy, and

[ii] combining the substantially collimated altered separate beams of electromagnetic energy of the primary second resolved beam of electromagnetic energy into a second substantially collimated single collinear beam of electromagnetic

energy without substantially changing the altered selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the plurality of portions of each of the substantially collimated separate beams of electromagnetic energy;

[f] [i] resolving from the first substantially collimated single collinear beam of electromagnetic energy a substantially collimated first resolved beam of electromagnetic energy having substantially the first selected predetermined orientation of a chosen component of electromagnetic wave field vectors and a substantially collimated second resolved beam of electromagnetic energy having substantially the second selected predetermined orientation of a chosen component of electromagnetic wave field vectors, and

[ii] resolving from the second substantially collimated single collinear beam of electromagnetic energy a substantially collimated first resolved beam of electromagnetic energy having substantially the first selected predetermined orientation of a chosen component of electromagnetic wave field vectors and a substantially collimated second resolved beam of electromagnetic energy having substantially the second selected predetermined orientation of a chosen component of electromagnetic wave field vectors; and

[g] merging one of the resolved beams of electromagnetic energy from the first substantially collimated single collinear beam of electromagnetic energy with one of the other resolved beams of electromagnetic energy from the second substantially collimated single collinear beam of electromagnetic energy into a substantially collimated third single collinear beam of electromagnetic energy.

177. A method as described in claim 176 wherein step [b] further includes resolving the primary beam into first and second resolved beams in which the first selected predetermined orientation of the chosen component of the electromagnetic wave field vectors has the same selected predetermined orientation of the chosen component of the electromagnetic wave field vectors as that of the second selected predetermined orientation of the chosen component of the electromagnetic wave field vectors.

178. A method as described in claim 176 wherein step [b] further includes resolving the primary beam into first and second resolved beams in which the first selected predetermined orientation of the chosen component of the electromagnetic wave field vectors has the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors different from the second selected predetermined orientation of the chosen component of the electromagnetic wave field vectors.

179. A method as described in claim 176 wherein step [g] further includes the merging of the resolved beams in which the plurality of portions of one of the merged beams has a different selected predetermined orientation of a chosen component of electromagnetic wave field vectors as that of the plurality of portions of the other merged beam.

180. A method as described in claim 176 wherein step [g] further includes merging of the resolved beams in which each merged beam has its plurality of portions parallel and noncoincident to the plurality of portions as that of the other merged beam.

181. A method as described in claim 176 wherein step [g] further includes merging of the resolved beams in which each merged beam has its plurality of portions parallel and partially coincident to the plurality of portions as that of the other merged beam.

182. A method as described in claim 176 wherein step [g] further includes merging of the resolved beams in which each merged beam has its plurality of portions parallel and simultaneous to the plurality of portions as that of the other merged beam.

183. A method as described in claim 176 wherein step [g] further includes merging of the resolved beams in which each merged beam has its plurality of portions parallel, noncoincident and simultaneous to the plurality of portions as that of the other merged beam.

184. A method as described in claim 176 wherein step [g] further includes merging

of the resolved beams in which each merged beam has its plurality of portions parallel, partially coincident and simultaneous to the plurality of portions as that of the other merged beam.

185. A method as described in claim 176 wherein step [g] further includes merging of the resolved beams in which the plurality of portions of one of the merged beams has the substantially same selected predetermined orientation of a chosen component of electromagnetic wave field vectors as that of the plurality of portions of the other merged beam.

186. A method as described in claim 176 wherein step [g] further includes merging of the resolved beams in which the plurality of portions of one of the merged beams has the substantially same selected predetermined orientation of a chosen component of electromagnetic wave field vectors as that of the plurality of portions of the other merged beam and further includes each merged beam having its plurality of portions parallel and noncoincident to the plurality of portions as that of the other merged beam.

187. A method as described in claim 176 wherein step [g] further includes merging of the resolved beams in which the plurality of portions of one of the merged beams has the substantially same selected predetermined orientation of a chosen component of electromagnetic wave field vectors as that of the plurality of portions of the other merged beam and further includes each merged beam having its plurality of portions parallel and partially coincident to the plurality of portions as that of the other merged beam.

188. A method as described in claim 176 wherein step [g] further includes merging of the resolved beams in which the plurality of portions of one of the merged beams has the substantially same selected predetermined orientation of a chosen component of electromagnetic wave field vectors as that of the plurality of portions of the other merged beam and further includes each merged beam having its plurality of portions parallel and simultaneous to the plurality of portions as that of the other merged beam.

189. A method as described in claim 176 further comprising the step of passing the substantially collimated third single collinear beam of electromagnetic energy to a projection means.

190. A method of producing a collinear beam of light having two constituent parts, comprising:

[a] providing a substantially collimated primary beam of light having a predetermined range of wavelengths and randomly changing orientations of a chosen component of electric field vectors;

[b] resolving the substantially collimated primary beam of light into a substantially collimated primary first resolved beam of light having substantially a first selected predetermined orientation of a chosen component of the electric field vectors and a substantially collimated primary second resolved beam of light having substantially a second selected predetermined orientation of a chosen component of the electric field vectors;

[c] separating each of the substantially collimated primary resolved beams of light into two or more substantially collimated separate beams of light, each of the substantially collimated separate beams of light having a selected predetermined orientation of a chosen component of electric field vectors;

[d] altering the selected predetermined orientation of the chosen component of the electric field vectors of a plurality of portions of each of the substantially collimated separate beams of light by passing the plurality of portions of each of the substantially collimated separate beams of light through a respective one of a plurality of altering means whereby the selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the substantially collimated separate beams of light is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of each of the substantially collimated separate beams of light passes through the respective one of the plurality of means for altering the selected predetermined orientation of the chosen component of the electric field vectors;

[e] [i] combining the substantially collimated altered separate beams of light of the primary first resolved beam of light into a first substantially collimated single collinear beam of light without substantially changing the altered selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the substantially collimated separate beams of light, and

[ii] combining the substantially collimated altered separate beams of light of the primary second resolved beam of light into a second substantially collimated single collinear beam of light without substantially changing the altered selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the substantially collimated separate beams of light;

[f] [i] resolving from the first substantially collimated single collinear beam of light a substantially collimated first resolved beam of light having substantially a first selected predetermined orientation of a chosen component of electric field vectors and a substantially collimated second resolved beam of light having substantially a second selected predetermined orientation of a chosen component of electric field vectors, and

[ii] resolving from the second substantially collimated single collinear beam of light a substantially collimated first resolved beam of light having substantially a first selected predetermined orientation of a chosen component of electric field vectors and a substantially collimated second resolved beam of light having substantially a second selected predetermined orientation of a chosen component of electric field vectors; and

[g] merging one of the resolved beams of light from the first substantially collimated single collinear beam of light with one of the other resolved beams of light from the second substantially collimated single collinear beam of light into a substantially collimated third single collinear beam of light.

191. A method as described in claim 190 wherein step [b] further includes resolving the primary beam in which the first selected predetermined orientation of the chosen component of the electric field vectors has the same selected

predetermined orientation of the chosen component of the electric field vectors as that of the second selected predetermined orientation of the chosen component of the electric field vectors.

192. A method as described in claim 190 wherein step [b] further includes resolving the primary beam in which the first selected predetermined orientation of the chosen component of the electric field vectors has the selected predetermined orientation of the chosen component of the electric field vectors different from the second selected predetermined orientation of the chosen component of the electric field vectors.

193. A method as described in claim 190 wherein step [g] further includes resolving the primary beam in which the plurality of portions of one of the merged beams has a different selected predetermined orientation of a chosen component of electric field vectors from that of the plurality of portions of the other merged beam.

194. A method as described in claim 190 wherein step [g] further includes each merged beam having its plurality of portions parallel and noncoincident to the plurality of portions as that of the other merged beam.

195. A method as described in claim 190 wherein step [g] further includes resolving the primary beam in which each merged beam has the plurality of portions parallel and partially coincident to the plurality of portions of the other merged beam.

196. A method as described in claim 190 wherein step [g] further includes resolving the primary beam in which each merged beam has its plurality of portions parallel and simultaneous to the plurality of portions of the other merged beam.

197. A method as described in claim 190 wherein step [g] further includes resolving the primary beam in which each merged beam has its plurality of portions parallel, noncoincident and simultaneous to the plurality of portions of the other merged beam.

198. A method as described in claim 190 wherein step [g] further includes resolving the primary beam in which each merged beam has its plurality of portions parallel, partially coincident and simultaneous to the plurality of portions as that of the other merged beam.

199. A method as described in claim 190 wherein step [g] further includes resolving the primary beam in which the plurality of portions of one of the merged beams has the substantially same selected predetermined orientation of a chosen component of electric field vectors as that of the plurality of portions of the other merged beam.

200. A method as described in claim 190 wherein step [g] further includes resolving the primary beam in which the plurality of portions of one of the merged beams has the substantially same selected predetermined orientation of a chosen component of electric field vectors as that of the plurality of portions of the other merged beam and further includes each merged beam having its plurality of portions parallel and noncoincident to the plurality of portions of the other merged beam.

201. A method as described in claim 190 wherein step [g] further includes resolving the primary beam in which the plurality of portions of one of the merged beams has the substantially same selected predetermined orientation of a chosen component of electric field vectors as that of the plurality of portions of the other merged beam and further includes each merged beam having its plurality of portions parallel and partially coincident to the plurality of portions of the other merged beam.

202. A method as described in claim 190 wherein step [g] further includes resolving the primary beam in which the plurality of portions of one of the merged beams has the substantially same selected predetermined orientation of a chosen component of electric field vectors as that of the plurality of portions of the other merged beam and further includes each merged beam having its plurality of portions parallel and simultaneous to the plurality of portions of the other merged beam.

203. A method as described in claim 190 further comprising the step of passing the substantially collimated third single collinear beam of light to a projection means.

204. A method as described in claim 190 wherein step [a] includes producing an initial beam of ultraviolet.

205. A system of producing a collinear beam of electromagnetic energy having two constituent parts, comprising:

[a] means for providing a substantially collimated primary beam of electromagnetic energy having a predetermined range of wavelengths and having randomly changing orientations of a chosen component of electromagnetic wave field vectors;

[b] means for resolving the substantially collimated primary beam of electromagnetic energy into a substantially collimated primary first resolved beam of electromagnetic energy having substantially a first selected predetermined orientation of a chosen component of the electromagnetic wave field vectors and a substantially collimated primary second resolved beam of electromagnetic energy having substantially a second elected predetermined orientation of a chosen component of the electromagnetic wave field vectors;

[c] means for separating each of the substantially collimated primary resolved beams of electromagnetic energy into two or more substantially collimated separate beams of electromagnetic energy, each of the substantially collimated separate beams of electromagnetic energy having a selected predetermined orientation of a chosen component of electromagnetic wave field vectors;

[d] means for altering the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of a plurality of portions of each of the substantially collimated separate beams of electromagnetic energy by passing the plurality of portions of each of the substantially collimated separate beams of electromagnetic energy through a respective one of a plurality of altering means whereby the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the plurality of portions of each of the

substantially collimated separate beams of electromagnetic energy is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of each of the substantially collimated separate beams of electromagnetic energy passes through the respective one of the plurality of means for altering the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors;

[e] [i] means for combining the substantially collimated altered separate beams of electromagnetic energy of the primary first resolved beam of electromagnetic energy into a first substantially collimated single collinear beam of electromagnetic energy without substantially changing the altered selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the plurality of portions of each of the substantially collimated separate beams of electromagnetic energy, and

[ii] means for combining the substantially collimated altered separate beams of electromagnetic energy of the primary second resolved beam of electromagnetic energy into a second substantially collimated single collinear beam of electromagnetic energy without substantially changing the altered selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the plurality of portions of each of the substantially collimated separate beams of electromagnetic energy;

[f] [i] means for resolving from the first substantially collimated single collinear beam of electromagnetic energy a substantially collimated first resolved beam of electromagnetic energy having substantially a first selected predetermined orientation of a chosen component of electromagnetic wave field vectors and a substantially collimated second resolved beam of electromagnetic energy having substantially a second selected predetermined orientation of a chosen component of electromagnetic wave field vectors, and

[ii] means for resolving from the second substantially collimated single collinear beam of electromagnetic energy a substantially collimated first resolved beam of electromagnetic energy having substantially a first selected predetermined orientation of a chosen component of electromagnetic wave field vectors and a substantially collimated second resolved beam of electromagnetic

energy having substantially a second selected predetermined orientation of a chosen component of electromagnetic wave field vectors; and

[g] means for merging one of the resolved beams of electromagnetic energy from the first substantially collimated single collinear beam of electromagnetic energy with one of the other resolved beams of electromagnetic energy from the second substantially collimated single collinear beam of electromagnetic energy into a substantially collimated third single collinear beam of electromagnetic energy.

206. A system as described in claim 205 wherein the means for resolving the substantially collimated primary beam includes means for resolving the substantially collimated primary beam into substantially collimated primary first and second resolved beams in which the first selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the first resolved beam has the same selected predetermined orientation of the chosen component of the electromagnetic wave field vectors as that of the second selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the second resolved beam.

207. A system as described in claim 205 wherein the means for resolving the substantially collimated primary beam includes means for resolving the substantially collimated primary beam into substantially collimated primary first and second resolved beams in which the first selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the first resolved beam has the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors different from the second selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the second resolved beam.

208. A system as described in claim 205 wherein the means for merging of the resolved beams includes means for merging of the resolved beams in which the plurality of portions of one of the merged beams has a different selected predetermined orientation of a chosen component of electromagnetic wave field

vectors from that of the plurality of portions of the other merged beam.

209. A system as described in claim 205 wherein the means for merging of the resolved beams includes means for merging of the resolved beams in which each merged beam has its plurality of portions parallel and noncoincident to the plurality of portions of the other merged beam.

210. A system as described in claim 205 wherein the means for merging of the resolved beams includes means for merging of the resolved beams in which each merged beam has its plurality of portions parallel and partially coincident to the plurality of portions of the other merged beam.

211. A system as described in claim 205 wherein the means for merging of the resolved beams includes means for merging of the resolved beams in which each merged beam has its plurality of portions parallel and simultaneous to the plurality of portions of the other merged beam.

212. A system as described in claim 205 wherein the means for merging of the resolved beams includes means for merging of the resolved beams in which each merged beam has its plurality of portions parallel, noncoincident and simultaneous to the plurality of portions of the other merged beam.

213. A system as described in claim 205 wherein the means for merging of the resolved beams includes means for merging of the resolved beams in which each merged beam has its plurality of portions parallel, partially coincident and simultaneous to the plurality of portions of the other merged beam.

214. A system as described in claim 205 wherein the means for merging of the resolved beams includes means for merging of the resolved beams in which the plurality of portions of one of the merged beams has the substantially same selected predetermined orientation of a chosen component of electromagnetic wave field vectors as that of the plurality of portions of the other merged beam.

215. A system as described in claim 205 wherein the means for merging of the resolved beams includes means for merging of the resolved beams in which the plurality of portions of one of the merged beams has the substantially same selected predetermined orientation of a chosen component of electromagnetic wave field vectors as that of the plurality of portions of the other merged beam and each merged beam has its plurality of portions parallel and noncoincident to the plurality of portions of the other merged beam.

216. A system as described in claim 205 wherein the means for merging of the resolved beams includes means for merging of the resolved beams in which the plurality of portions of one of the merged beams has the substantially same selected predetermined orientation of a chosen component of electromagnetic wave field vectors as that of the plurality of portions of the other merged beam and each merged beam has its plurality of portions parallel and partially coincident to the plurality of portions of the other merged beam.

217. A system of producing a collinear beam of light having two constituent parts, comprising:

[a] means for providing a substantially collimated primary beam of light having a predetermined range of wavelengths and having randomly changing orientations of a chosen component of electric field vectors;

[b] means for resolving the substantially collimated primary beam of light into a substantially collimated primary first resolved beam of light having substantially a first selected predetermined orientation of a chosen component of the electric field vectors and a substantially collimated primary second resolved beam of light having substantially a second selected predetermined orientation of a chosen component of the electric field vectors;

[c] means for separating each of the substantially collimated primary resolved beams of light into two or more substantially collimated separate beams of light, each of the substantially collimated separate beams of light having a selected predetermined orientation of a chosen component of electric field vectors;

[d] means for altering the selected predetermined orientation of the chosen component of the electric field vectors of a plurality of portions of each of the substantially collimated separate beams of light by passing the plurality of portions of each of the substantially collimated separate beams of light through a respective one of a plurality of altering means whereby the selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the substantially collimated separate beams of light is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of each of the substantially collimated separate beams of light passes through the respective one of the plurality of means for altering the selected predetermined orientation of the chosen component of the electric field vectors;

[e] [i] means for combining the substantially collimated altered separate beams of light of the primary first resolved beam of light into a first substantially collimated single collinear beam of light without substantially changing the altered selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the substantially collimated separate beams of light, and

[ii] means for combining the substantially collimated altered separate beams of light of the primary second resolved beam of light into a second substantially collimated single collinear beam of light without substantially changing the altered selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the substantially collimated separate beams of light;

[f] [i] means for resolving from the first substantially collimated single collinear beam of light a substantially collimated first resolved beam of light having substantially a first selected predetermined orientation of a chosen component of electric field vectors and a substantially collimated second resolved beam of light having substantially a second selected predetermined orientation of a chosen component of electric field vectors, and

[ii] means for resolving from the second substantially collimated single collinear beam of light a substantially collimated first resolved beam of light

having substantially a first selected predetermined orientation of a chosen component of electric field vectors and a substantially collimated second resolved beam of light having substantially a second selected predetermined orientation of a chosen component of electric field vectors; and

[g] means for merging one of the resolved beams of light from the first substantially collimated single collinear beam of light with one of the other resolved beams of light from the second substantially collimated single collinear beam of light into a substantially collimated third single collinear beam of light.

218. A system as described in claim 217 wherein the means for merging of the resolved beams includes means for merging of the resolved beams in which the plurality of portions of one of the merged beams has the substantially same selected predetermined orientation of a chosen component of electric field vectors as that of the plurality of portions of the other merged beam and each merged beam has its plurality of portions parallel and simultaneous to the plurality of portions of the other merged beam.

219. A system as described in claim 217 wherein the means for resolving the substantially collimated primary beam includes means for resolving the substantially collimated primary beam into substantially collimated primary first and second resolved beams in which the first selected predetermined orientation of the chosen component of the electric field vectors of the first resolved beam has the same selected predetermined orientation of the chosen component of the electric field vectors as that of the second selected predetermined orientation of the chosen component of the electric field vectors of the second resolved beam.

220. A system as described in claim 217 wherein the means for resolving the substantially collimated primary beam includes means for resolving the substantially collimated primary beam into substantially collimated primary first and second resolved beams in which the first selected predetermined orientation of the chosen component of the electric field vectors of the first resolved beam has the selected predetermined orientation of the chosen component of the electric field vectors

different from the second selected predetermined orientation of the chosen component of the electric field vectors of the second resolved beam.

221. A system as described in claim 217 wherein the means for merging of the resolved beams includes means for merging of the resolved beams in which the plurality of portions of one of the merged beams has a different selected predetermined orientation of a chosen component of electric field vectors from that of the plurality of portions of the other merged beam.

222. A system as described in claim 217 wherein the means for merging of the resolved beams includes means for merging of the resolved beams in which each merged beam has its plurality of portions parallel and noncoincident to the plurality of portions of the other merged beam.

223. A system as described in claim 217 wherein the means for merging of the resolved beams includes means for merging of the resolved beams in which each merged beam has its plurality of portions parallel and partially coincident to the plurality of portions of the other merged beam.

224. A system as described in claim 217 wherein the means for merging of the resolved beams includes means for merging of the resolved beams in which each merged beam has its plurality of portions parallel and simultaneous to the plurality of portions of the other merged beam.

225. A system as described in claim 217 wherein the means for merging of the resolved beams includes means for merging of the resolved beams in which each merged beam has its plurality of portions parallel, noncoincident and simultaneous to the plurality of portions of the other merged beam.

226. A system as described in claim 217 wherein the means for merging of the resolved beams includes means for merging of the resolved beams in which each merged beam has its plurality of portions parallel, partially coincident and

simultaneous to the plurality of portions of the other merged beam.

227. A system as described in claim 217 wherein the means for merging of the resolved beams includes means for merging of the resolved beams in which the plurality of portions of one of the merged beams has the substantially same selected predetermined orientation of a chosen component of electric field vectors as that of the plurality of portions of the other merged beam.

228. A system as described in claim 217 wherein the means for merging of the resolved beams includes means for merging of the resolved beams in which the plurality of portions of one of the merged beams has the substantially same selected predetermined orientation of a chosen component of electric field vectors as that of the plurality of portions of the other merged beam and each merged beam has its plurality of portions parallel and noncoincident to the plurality of portions of the other merged beam.

229. A system as described in claim 217 wherein the means for merging of the resolved beams includes means for merging of the resolved beams in which the plurality of portions of one of the merged beams has the substantially same selected predetermined orientation of a chosen component of electric field vectors as that of the plurality of portions of the other merged beam and each merged beam has its plurality of portions parallel and partially coincident to the plurality of portions of the other merged beam.

230. A system as described in claim 43 wherein the means for merging of the resolved beams includes means for merging of the resolved beams in which the plurality of portions of one of the merged beams has the substantially same selected predetermined orientation of a chosen component of electric field vectors as that of the plurality of portions of the other merged beam and further includes each merged beam having its plurality of portions parallel and simultaneous to the plurality of portions as that of the other merged beam.

231. A system as described in claim 217 further comprising means for passing the substantially collimated third single collinear beam of light to a projection means.

232. A system as described in claim 205 wherein the means for providing a substantially collimated primary beam includes providing an initial beam of ultraviolet.

233. A method of producing a modulated beam of electromagnetic energy, comprising:

[a] providing a primary beam of electromagnetic energy having a predetermined range of wavelengths and randomly changing orientations of a chosen component of electromagnetic wave field vectors;

[b] resolving the primary beam of electromagnetic energy into a primary first resolved beam of electromagnetic energy having substantially a first selected predetermined orientation of a chosen component of the electromagnetic wave field vectors and a primary second resolved beam of electromagnetic energy having substantially a second selected predetermined orientation of a chosen component of the electromagnetic wave field vectors;

[c] separating each of the primary resolved beams of electromagnetic energy into two or more separate beams of electromagnetic energy, each of the separate beams of electromagnetic energy having a selected predetermined orientation of a chosen component of electromagnetic wave field vectors;

[d] altering the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of a plurality of portions of each of the separate beams of electromagnetic energy by passing the plurality of portions of each of the separate beams of electromagnetic energy through a respective one of a plurality of altering means whereby the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the plurality of portions of each of the separate beams of electromagnetic energy is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of each of the separate beams of electromagnetic energy passes through the respective one of the plurality of means for

altering the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors;

[e] [i] combining the altered separate beams of electromagnetic energy of the primary first resolved beam of electromagnetic energy into a first single collinear beam of electromagnetic energy without substantially changing the altered selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the plurality of portions of each of the separate beams of electromagnetic energy, and

[ii] combining the altered separate beams of electromagnetic energy of the primary second resolved beam of electromagnetic energy into a second single collinear beam of electromagnetic energy without substantially changing the altered selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the plurality of portions of each of the separate beams of electromagnetic energy; and

[f] [i] resolving from the first single collinear beam of electromagnetic energy a first resolved beam of electromagnetic energy having substantially a first selected predetermined orientation of a chosen component of electromagnetic wave field vectors and a second resolved beam of electromagnetic energy having substantially a second selected predetermined orientation of a chosen component of electromagnetic wave field vectors, and

[ii] resolving from the second single collinear beam of electromagnetic energy a first resolved beam of electromagnetic energy having substantially a first selected predetermined orientation of a chosen component of electromagnetic wave field vectors and a second resolved beam of electromagnetic energy having substantially a second selected predetermined orientation of a chosen component of electromagnetic wave field vectors.

234. A method as described in claim 233 wherein step [a] includes providing a substantially collimated primary beam of electromagnetic energy.

235. A method as described in claim 233 wherein step [a] includes providing a primary beam of electromagnetic energy having a rectangular cross sectional area.

236. A method as described in claim 233 wherein step [a] includes providing a primary initial beam of electromagnetic energy having substantially the same selected predetermined orientation for the chosen component of the electromagnetic wave field vectors substantially across the beam.

237. A method as described in claim 233 wherein step [b] includes resolving the primary beam into primary first and second resolved beams in which each of the resolved beams of electromagnetic energy has the substantially same selected predetermined orientation of the chosen component of the electromagnetic wave field vectors substantially across each of the resolved beams of electromagnetic energy as that of the other resolved beams of electromagnetic energy.

238. A method as described in claim 233 wherein step [b] includes resolving the primary beam into primary first and second resolved beams in which the first selected predetermined orientation of the chosen component of the electromagnetic wave field vectors has the same selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the second selected predetermined orientation of the chosen component of the electromagnetic wave field vectors.

239. A method as described in claim 233 further comprising the step of passing at least one of the resolved beams of electromagnetic energy from step [f] to a projection means.

240. A method as described in claim 233 further comprising the step of passing one of the resolved beams of electromagnetic energy from step [f] [i] to a first projection means and passing one of the resolved beams of electromagnetic energy from step [f] [ii] to a second projection means.

241. A method as described in claim 233 further comprising the step of adjusting the electromagnetic spectrum of at least one of the separate beams of electromagnetic energy.

242. A method as described in claim 241 wherein the step of adjusting the electromagnetic spectrum of at least one of the separate beams of electromagnetic energy includes adjusting the predetermined range of wavelengths of at least one of the separate beams of electromagnetic energy.

243. A method as described in claim 241 wherein the step of adjusting the electromagnetic spectrum of at least one of the separate beams of electromagnetic energy includes adjusting the magnitude of at least one of the separate beams of electromagnetic energy.

244. A method as described in claim 233 wherein step [c] includes separating each of the primary resolved beams into two or more separate beams in which each of the separate beams of electromagnetic energy has the electromagnetic spectrum different from the other separate beams of electromagnetic energy.

245. A method as described in claim 244 wherein step [c] includes separating each of the primary resolved beams into two or more separate beams in which each of the separate beams of electromagnetic energy has a predetermined range of wavelengths different from the other separate beams of electromagnetic energy.

246. A method as described in claim 244 further comprising the step of adjusting the magnitude of at least one of the separate beams of electromagnetic energy from step [c].

247. A method of producing a modulated beam of light, comprising:

[a] providing a primary beam of light having a predetermined range of wavelengths and randomly changing orientations of a chosen component of electric field vectors;

[b] resolving the primary beam of light into a primary first resolved beam of light having substantially a first selected predetermined orientation of a chosen component of the electric field vectors and a primary second resolved beam of light

having substantially a second selected predetermined orientation of a chosen component of the electric field vectors;

[c] separating each of the primary resolved beams of light into two or more separate beams of light, each of the separate beams of light having a selected predetermined orientation of a chosen component of electric field vectors;

[d] altering the selected predetermined orientation of the chosen component of the electric field vectors of a plurality of portions of each of the separate beams of light by passing the plurality of portions of each of the separate beams of light through a respective one of a plurality of altering means whereby the selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the separate beams of light is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of each of the separate beams of light passes through the respective one of the plurality of means for altering the selected predetermined orientation of the chosen component of the electric field vectors;

[e] [i] combining the altered separate beams of light of the primary first resolved beam of light into a first single collinear beam of light without substantially changing the altered selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the separate beams of light, and

[ii] combining the altered separate beams of light of the primary second resolved beam of light into a second single collinear beam of light without substantially changing the altered selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the separate beams of light; and

[f] [i] resolving from the first single collinear beam of light a first resolved beam of light having substantially a first selected predetermined orientation of a chosen component of electric field vectors and a second resolved beam of light having substantially a second selected predetermined orientation of a chosen component of electric field vectors, and

[ii] resolving from the second single collinear beam of light a first resolved beam of light having substantially a first selected predetermined orientation of a chosen component of electric field vectors and a second resolved beam of light having substantially a second selected predetermined orientation of a chosen component of electric field vectors.

248. A method as described in claim 247 wherein step [a] includes providing a substantially collimated primary beam of light.

249. A method as described in claim 247 wherein step [a] includes providing the primary of light having a rectangular cross sectional area.

250. A method as described in claim 247 wherein step [a] includes providing a primary beam of light having substantially the same selected predetermined orientation for the chosen component of the electric field vectors substantially across the beam.

251. A method as described in claim 247 wherein step [b] includes resolving the primary beam into primary first and second resolved beams in which each of the resolved beams of light has the substantially same selected predetermined orientation of the chosen component of the electric field vectors substantially across each of the resolved beams of light as that of the other resolved beams of light.

252. A method as described in claim 247 wherein step [b] includes resolving the primary beam into primary first and second resolved beams in which the first selected predetermined orientation of the chosen component of the electric field vectors has the same selected predetermined orientation of the chosen component of the electric field vectors of the second selected predetermined orientation of the chosen component of the electric field vectors.

253. A method as described in claim 247 further comprising the step of passing at least one of the resolved beams of light from step [f] to a projection means.

254. A method as described in claim 247 further comprising the step of passing one of the resolved beams of light from step [f] [i] to a first projection means and passing one of the resolved beams of light from step [f] [ii] to a second projection means.

255. A method as described in claim 247 further comprising the step of adjusting the light spectrum of at least one of the separate beams of light.

256. A method as described in claim 255 wherein the step of adjusting the electromagnetic spectrum of at least one of the separate beams of light includes adjusting the predetermined range of wavelengths of at least one of the separate beams of light.

257. A method as described in claim 255 wherein the step of adjusting the electromagnetic spectrum of at least one of the separate beams of light includes adjusting a magnitude of at least one of the separate beams of light.

258. A method as described in claim 247 wherein step [c] includes separating each of the primary resolved beams into two or more separate beams in which each of the separate beams of light further has the light spectrum different from the other separate beams of light.

259. A method as described in claim 258 wherein step [c] includes separating each of the primary resolved beams into two or more separate beams in which each of the separate beams of light has a predetermined range of wavelengths different from the other separate beams of light.

260. A method as described in claim 258 further comprising the step of adjusting the magnitude of at least one of the separate beams of electromagnetic energy from step [c].

261. A system of producing a modulated beam of electromagnetic energy, comprising:

[a] means for providing a primary beam of electromagnetic energy having a predetermined range of wavelengths and randomly changing orientations of a chosen component of electromagnetic wave field vectors;

[b] means for resolving the primary beam of electromagnetic energy into a primary first resolved beam of electromagnetic energy having substantially a first selected predetermined orientation of a chosen component of the electromagnetic wave field vectors and a primary second resolved beam of electromagnetic energy having substantially a second selected predetermined orientation of a chosen component of the electromagnetic wave field vectors;

[c] means for separating each of the primary resolved beams of electromagnetic energy into two or more separate beams of electromagnetic energy, each of the separate beams of electromagnetic energy having a selected predetermined orientation of a chosen component of electromagnetic wave field vectors;

[d] means for altering the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of a plurality of portions of each of the separate beams of electromagnetic energy by passing the plurality of portions of each of the separate beams of electromagnetic energy through a respective one of a plurality of altering means whereby the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the plurality of portions of each of the separate beams of electromagnetic energy is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of each of the separate beams of electromagnetic energy passes through the respective one of the plurality of means for altering the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors;

[e] [i] means for combining the altered separate beams of electromagnetic energy of the primary first resolved beam of electromagnetic energy into a first single collinear beam of electromagnetic energy without substantially changing the altered selected predetermined orientation of the chosen component of

the electromagnetic wave field vectors of the plurality of portions of each of the separate beams of electromagnetic energy, and

[ii] means for combining the altered separate beams of electromagnetic energy of the primary second resolved beam of electromagnetic energy into a second single collinear beam of electromagnetic energy without substantially changing the altered selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the plurality of portions of each of the separate beams of electromagnetic energy; and

[f] [i] means for resolving from the first single collinear beam of electromagnetic energy a first resolved beam of electromagnetic energy having substantially a first selected predetermined orientation of a chosen component of electromagnetic wave field vectors and a second resolved beam of electromagnetic energy having substantially a second selected predetermined orientation of a chosen component of electromagnetic wave field vectors, and

[ii] means for resolving from the second single collinear beam of electromagnetic energy a first resolved beam of electromagnetic energy having substantially a first selected predetermined orientation of a chosen component of electromagnetic wave field vectors and a second resolved beam of electromagnetic energy having substantially a second selected predetermined orientation of a chosen component of electromagnetic wave field vectors.

262. A system as described in claim 261 in which the means for providing a primary beam of electromagnetic energy includes means for providing a substantially collimated beam of electromagnetic energy.

263. A system as described in claim 261 in which the means for providing a primary beam of electromagnetic energy includes means for providing the initial beam of electromagnetic energy having a rectangular cross sectional area.

264. A system as described in claim 261 in which the means for providing a primary beam of electromagnetic energy includes means for providing an initial beam of electromagnetic energy having substantially the same selected predetermined

orientation for the chosen component of the electromagnetic wave field vectors substantially across the beam.

265. A system as described in claim 261 in which the means for resolving the primary beam of electromagnetic energy into primary first and second resolved beams of electromagnetic energy includes means for resolving the primary beam of electromagnetic energy into primary first and second resolved beams of electromagnetic energy with the resolved beams of electromagnetic energy having the substantially same selected predetermined orientation of the chosen component of the electromagnetic wave field vectors substantially across each of the resolved beams of electromagnetic energy as that of the ocher resolved beams of electromagnetic energy.

266. A system as described in claim 261 in which the means for resolving the primary beam of electromagnetic energy into primary first and second resolved beams of electromagnetic energy includes means for resolving the primary beam of electromagnetic energy into primary first and second resolved beams of electromagnetic energy with the first selected predetermined orientation of the chosen component of the electromagnetic wave field vectors having the same selected predetermined orientation of the chosen component of the electromagnetic wave field vectors as that of the second selected predetermined orientation of the chosen component of the electromagnetic wave field vectors.

267. A system as described in claim 261, further comprising means for passing at least one of the resolved beams of electromagnetic energy from step [f] to a projection means.

268. A system as described in claim 261 further comprising means for passing one of the resolved beams of electromagnetic energy from step [f] [i] to a first projection means and passing one of the resolved beams of electromagnetic energy from step [f] [ii] to a second projection means.

269. A system as described in claim 261 further comprising the means for adjusting the electromagnetic spectrum of at least one of the separate beams of electromagnetic energy.

270. A system as described in claim 269 wherein the means for adjusting the electromagnetic spectrum of at least one of the separate beams of electromagnetic energy includes means for adjusting a predetermined range of wavelengths of at least one of the separate beams of electromagnetic energy.

271. A system as described in claim 269 wherein the means for adjusting the electromagnetic spectrum of at least one of the separate beams of electromagnetic energy includes the means for adjusting a magnitude of at least one of the separate beams of electromagnetic energy.

272. A system as described in claim 261 wherein the separating means includes means for separating the beams in which each of the separate beams of electromagnetic energy has an electromagnetic spectrum different from the electromagnetic spectrum of each of the other separate beams of electromagnetic energy.

273. A system as described in claim 272 wherein the separating means includes means for separating the beams in which each of the separate beams of electromagnetic energy has a predetermined range of wavelengths different from a predetermined range of wavelengths of each of the other separate beams of electromagnetic energy.

274. A system as described in claim 272 further comprising the means for the magnitude of at least one of the separate beams of electromagnetic energy.

275. A system of producing a modulated beam of light, comprising:

[a] means for providing a primary beam of light having a predetermined range of wavelengths and randomly changing orientations of a chosen component of electric field vectors;

[b] means for resolving the primary beam of light into a primary first resolved beam of light having substantially a first selected predetermined orientation of a chosen component of the electric field vectors and a primary second resolved beam of light having substantially a second selected predetermined orientation of a chosen component of the electric field vectors;

[c] means for separating each of the primary resolved beams of light into two or more separate beams of light, each of the separate beams of light having a selected predetermined orientation of a chosen component of electric field vectors;

[d] means for altering the selected predetermined orientation of the chosen component of the electric field vectors of a plurality of portions of each of the separate beams of light by passing the plurality of portions of each of the separate beams of light through a respective one of a plurality of altering means whereby the selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the separate beams of light is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of each of the separate beams of light passes through the respective one of the plurality of means for altering the selected predetermined orientation of the chosen component of the electric field vectors;

[e] [i] means for combining the altered separate beams of light of the primary first resolved beam of light into a first single collinear beam of light without substantially changing the altered selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the separate beams of light, and

[ii] means for combining the altered separate beams of light of the primary second resolved beam of light into a second single collinear beam of light without substantially changing the altered selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the separate beams of light; and

[f] [i] means for resolving from the first single collinear beam of light a first resolved beam of light having substantially a first selected predetermined orientation of a chosen component of electric field vectors and a second resolved beam of light having substantially a second selected predetermined orientation of a chosen component of electric field vectors, and

[ii] means for resolving from the second single collinear beam of light a first resolved beam of light having substantially a first selected predetermined orientation of a chosen component of electric field vectors and a second resolved beam of light having substantially a second selected predetermined orientation of a chosen component of electric field vectors.

276. A system as described in claim 275 in which the means for providing a primary beam of light includes means for providing a substantially collimated beam of light.

277. A system as described in claim 275 in which the means for providing a primary beam of light includes means for providing the initial beam of light having a rectangular cross sectional area.

278. A system as described in claim 275 in which the means for providing a primary beam of light includes means for providing an initial beam of light having substantially the same selected predetermined orientation for the chosen component of the electric field vectors substantially across the beam.

279. A system as described in claim 275 in which the means for resolving the primary beam of light into primary first and second resolved beams of light includes means for resolving the primary beam of light into primary first and second resolved beams of light with the resolved beams of light having the substantially same selected predetermined orientation of the chosen component of the electric field vectors substantially across each of the resolved beams of light as that of the other resolved beams of light.

280. A system as described in claim 275 in which the means for resolving the primary beam of light into primary first and second resolved beams of light includes means for resolving the primary beam of light into primary first and second resolved beams of light with the first selected predetermined orientation of the chosen component of the electric field vectors having the same selected predetermined orientation of the chosen component of the electric field vectors as that of the second selected predetermined orientation of the chosen component of the electric field vectors.

281. A system as described in claim 275 further comprising means for passing at least one of the resolved beams of light from step [f] to a projection means.

282. A system as described in claim 275 further comprising means for passing one of the resolved beams of light from step [f] [i] to a first projection means and passing one of the resolved beams of light from step [f] [ii] to a second projection means.

283. A system as described in claim 275 further comprising the means for adjusting the electromagnetic spectrum of at least one of the separate beams of light.

284. A system as described in claim 283 wherein the means for adjusting the electromagnetic spectrum of at least one of the separate beams of light includes means for adjusting a predetermined range of wavelengths of at least one of the separate beams of light.

285. A system as described in claim 283 wherein the means for adjusting the electromagnetic spectrum of at least one of the separate beams of light includes the means for adjusting a magnitude of at least one of the separate beams of light.

286. A system as described in claim 275 wherein the separating means includes means for separating the beams in which each of the separate beams of light has an light spectrum different from the light spectrum of each of the other separate beams of light.

287. A system as described in claim 286 wherein the separating means includes means for separating the beams in which each of the separate beams of light has a predetermined range of wavelengths different from a predetermined range of wavelengths of each of the other separate beams of light.

288. A system as described in claim 286 further comprising the means for adjusting the magnitude of at least one of the separate beams of light.

289. A method of producing a collinear beam of electromagnetic energy having two constituent parts, comprising:

[a] providing a primary beam of electromagnetic energy having a predetermined range of wavelengths, randomly changing orientations of a chosen component of electromagnetic wave field vectors, and a substantially uniform flux intensity substantially across the initial beam of electromagnetic energy;

[b] resolving the primary beam of electromagnetic energy into a primary first resolved beam of electromagnetic energy having substantially a first selected predetermined orientation of a chosen component of the electromagnetic wave field vectors and a primary second resolved beam of electromagnetic energy having substantially a second selected predetermined orientation of a chosen component of the electromagnetic wave field vectors;

[c] altering the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of a plurality of portions of each of the primary resolved beams of electromagnetic energy by passing the plurality of portions of each of the primary resolved beams of electromagnetic energy through a respective one of a plurality of altering means whereby the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the plurality of portions of each of the primary resolved beams of electromagnetic energy is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of each of the primary resolved beams of electromagnetic energy passes through the respective one of the

plurality of means for altering the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors;

[d] [i] resolving from the first altered primary first resolved beam of electromagnetic energy a first resolved beam of electromagnetic energy having substantially a first selected predetermined orientation of a chosen component of electromagnetic wave field vectors and a second resolved beam of electromagnetic energy having substantially a second selected predetermined orientation of a chosen component of electromagnetic wave field vectors, and

[ii] resolving from the second altered primary first resolved beam of electromagnetic energy a first resolved beam of electromagnetic energy having substantially a first selected predetermined orientation of a chosen component of electromagnetic wave field vectors and a second resolved beam of electromagnetic energy having substantially a second selected predetermined orientation of a chosen component of electromagnetic wave field vectors, and

[e] merging one of the resolved beams of electromagnetic energy from the altered primary first resolved beam of electromagnetic energy with one of the resolved beams of electromagnetic energy from the second altered primary resolved beam of electromagnetic energy into a first single collinear beam of electromagnetic energy.

290. A method as described in claim 289 wherein step [b] includes resolving the primary beam into primary first and second resolved beams in which the first selected predetermined orientation of the chosen component of the electromagnetic wave field vectors has the same selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the second selected predetermined orientation of the chosen component of the electromagnetic wave field vectors.

291. A method as described in claim 289 wherein step [b] includes resolving the primary beam into primary first and second resolved beams in which the first selected predetermined orientation of the chosen component of the electromagnetic wave field vectors has a selected predetermined orientation of the chosen component of the electromagnetic wave field vectors different from the second selected predetermined

orientation of the chosen component of the electromagnetic wave field vectors.

292. A method as described in claim 289 wherein step [e] includes merging said resolved beams in which the plurality of portions of one of the merged resolved beams has a different selected predetermined orientation of a chosen component of electromagnetic wave field vectors from the plurality of portions of the other merged resolved beam.

293. A method as described in claim 289 wherein step [e] includes merging said resolved beams in which each merged beam has its plurality of portions parallel and noncoincident to the plurality of portions of the other merged beam.

294. A method as described in claim 289 wherein step [e] includes merging said resolved beams in which each merged beam has its plurality of portions parallel and partially coincident to the plurality of portions of the other merged beam.

295. A method as described in claim 289 wherein step [e] includes merging said resolved beams in which each merged beam has its plurality of portions parallel and simultaneous to the plurality of portions of the other merged beam.

296. A method as described in claim 289 wherein step [e] includes merging said resolved beams in which each merged beam has its plurality of portions parallel, noncoincident and simultaneous to the plurality of portions of the other merged beam.

297. A method as described in claim 289 wherein step [e] includes merging said resolved beams in which each merged beam has its plurality of portions parallel, partially coincident and simultaneous to the plurality of portions of the other merged beam.

298. A method as described in claim 289 wherein step [e] includes merging said resolved beams in which the plurality of portions of one of the merged beams has the substantially same selected predetermined orientation of a chosen component of

electromagnetic wave field vectors as the plurality of portions of the other merged beam.

299. A method as described in claim 289 wherein step [e] includes merging said resolved beams in which the plurality of portions of one of the merged beams has the substantially same selected predetermined orientation of a chosen component of electromagnetic wave field vectors as the plurality of portions of the other merged beam and each merged beam has its plurality of portions parallel and noncoincident to the plurality of portions of the other merged beam.

300. A method as described in claim 289 wherein step [e] includes merging said resolved beams in which the plurality of portions of one of the merged beams has the substantially same selected predetermined orientation of a chosen component of electromagnetic wave field vectors as the plurality of portions of the other merged beam and each merged beam has its plurality of portions parallel and partially coincident to the plurality of portions of the other merged beam.

301. A method as described in claim 289 wherein step [e] includes merging said resolved beams in which the plurality of portions of one of the merged beams has the substantially same selected predetermined orientation of a chosen component of electromagnetic wave field vectors as that of the plurality of portions of the other merged beam and each merged beam having its plurality of portions parallel and simultaneous to the plurality of portions of the other merged beam.

302. A method as described in claim 289 further comprising the step of passing the first single collinear beam of electromagnetic energy to a projection means.

303. A method of producing a collinear beam of light having two constituent parts, comprising:

[a] providing a primary beam of light having a predetermined range of wavelengths randomly changing orientations of a chosen component of electric field

vectors, and a substantially uniform flux intensity substantially across the initial beam of light;

[b] resolving the primary beam of light into a primary first resolved beam of light having substantially a first selected predetermined orientation of a chosen component of the electric field vectors and a primary second resolved beam of light having substantially a second selected predetermined orientation of a chosen component of the electric field vectors;

[c] altering the selected predetermined orientation of the chosen component of the electric field vectors of a plurality of portions of each of the primary resolved beams of light by passing the plurality of portions of each of the primary resolved beams of light through a respective one of a plurality of altering means whereby the selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the primary resolved beams of light is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of each of the primary resolved beams of light passes through the respective one of the plurality of means for altering the selected predetermined orientation of the chosen component of the electric field vectors;

[d] [i] resolving from the first altered primary first resolved beam of light a first resolved beam of light having substantially a first selected predetermined orientation of a chosen component of electric field vectors and a second resolved beam of light having substantially a second selected predetermined orientation of a chosen component of electric field vectors, and

[ii] resolving from the second altered primary first resolved beam of light a first resolved beam of light having substantially a first selected predetermined orientation of a chosen component of electric field vectors and a second resolved beam of light having substantially a second selected predetermined orientation of a chosen component of electric field vectors; and

[e] merging one of the resolved beams of light from the altered primary first resolved beam of light with one of the resolved beams of light from the second altered primary resolved beam of light into a first single collinear beam of light.

304. A method as described in claim 303 wherein step [b] includes resolving the primary beam into primary first and second resolved beams in which the first selected predetermined orientation of the chosen component of the electric field vectors has the same selected predetermined orientation of the chosen component of the electric field vectors of the second selected predetermined orientation of the chosen component of the electric field vectors.

305. A method as described in claim 303 wherein step [b] includes resolving the primary beam into primary first and second resolved beams in which the first selected predetermined orientation of the chosen component of the electric field vectors has a selected predetermined orientation of the chosen component of the electric field vectors different from the second selected predetermined orientation of the chosen component of the electric field vectors.

306. A method as described in claim 303 wherein step [e] includes merging said resolved beams in which the plurality of portions of one of the merged resolved beams has a different selected predetermined orientation of a chosen component of electric field vectors from the plurality of portions of the other merged resolved beam.

307. A method as described in claim 303 wherein step [e] includes merging said resolved beams in which each merged beam has its plurality of portions parallel and noncoincident to the plurality of portions of the other merged beam.

308. A method as described in claim 303 wherein step [e] includes merging said resolved beams in which each merged beam has its plurality of portions parallel and partially coincident to the plurality of portions of the other merged beam.

309. A method as described in claim 303 wherein step [e] includes merging said resolved beams in which each merged beam has its plurality of portions parallel and simultaneous to the plurality of portions of the other merged beam.

310. A method as described in claim 303 wherein step [e] includes merging said

resolved beams in which each merged beam has its plurality of portions parallel, noncoincident and simultaneous to the plurality of portions of the other merged beam.

311. A method as described in claim 303 wherein step [e] includes merging said resolved beams in which each merged beam has its plurality of portions parallel, partially coincident and simultaneous to the plurality of portions of the other merged beam.

312. A method as described in claim 303 wherein step [e] includes merging said resolved beams in which the plurality of portions of one of the merged beams has the substantially same selected predetermined orientation of a chosen component of electric field vectors as the plurality of portions of the other merged beam.

313. A method as described in claim 303 wherein step [e] includes merging said resolved beams in which the plurality of portions of one of the merged beams has the substantially same selected predetermined orientation of a chosen component of electric field vectors as the plurality of portions of the other merged beam and each merged beam has its plurality of portions parallel and noncoincident to the plurality of portions of the other merged beam.

314. A method as described in claim 303 wherein step [e] includes merging said resolved beams in which the plurality of portions of one of the merged beams has the substantially same selected predetermined orientation of a chosen component of electric field vectors as the plurality of portions of the other merged beam and each merged beam has its plurality of portions parallel and partially coincident to the plurality of portions of the other merged beam.

315. A method as described in claim 303 wherein step [e] includes merging said resolved beams in which the plurality of portions of one of the merged beams has the substantially same selected predetermined orientation of a chosen component of electric field vectors as that of the plurality of portions of the other merged beam and each merged beam having its plurality of portions parallel and simultaneous to the

plurality of portions of the other merged beam.

316. A method as described in claim 303 further comprising the step of passing the first single collinear beam of electromagnetic energy to a projection means.

317. A method as described in claim 289 wherein step [a] includes providing a primary beam of ultraviolet.

318. A system of producing a collinear beam of electromagnetic energy having two constituent parts, comprising:

[a] means for providing a primary beam of electromagnetic energy having a predetermined range of wavelengths, randomly changing orientations of a chosen component of electromagnetic wave field vectors, and a substantially uniform flux intensity substantially across the initial beam of electromagnetic energy;

[b] means for resolving the primary beam of electromagnetic energy into a primary first resolved beam of electromagnetic energy having substantially a first selected predetermined orientation of a chosen component of the electromagnetic wave field vectors and a primary second resolved beam of electromagnetic energy having substantially a second selected predetermined orientation of a chosen component of the electromagnetic wave field vectors;

[c] means for altering the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of a plurality of portions of each of the primary resolved beams of electromagnetic energy by passing the plurality of portions of each of the primary resolved beams of electromagnetic energy through a respective one of a plurality of altering means whereby the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the plurality of portions of each of the primary resolved beams of electromagnetic energy is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of each of the primary resolved beams of electromagnetic energy passes through the respective one of the plurality of means for altering the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors;

[d] [i] means for resolving from the first altered primary first resolved beam of electromagnetic energy a first resolved beam of electromagnetic energy having substantially a first selected predetermined orientation of a chosen component of electromagnetic wave field vectors and a second resolved beam of electromagnetic energy having substantially a second selected predetermined orientation of a chosen component of electromagnetic wave field vectors, and

[ii] means for resolving from the second altered primary first resolved beam of electromagnetic energy a first resolved beam of electromagnetic energy having substantially a first selected predetermined orientation of a chosen component of electromagnetic wave field vectors and a second resolved beam of electromagnetic energy having substantially a second selected predetermined orientation of a chosen component of electromagnetic wave field vectors; and

[e] means for merging one of the resolved beams of electromagnetic energy from the altered primary first resolved beam of electromagnetic energy with one of the resolved beams of electromagnetic energy from the second altered primary resolved beam of electromagnetic energy into a first single collinear beam of electromagnetic energy.

319. A system as described in claim 318 wherein the means for resolving the primary beam into first and second resolved beams includes means for resolving the primary beam into first and second resolved beams in which the first selected predetermined orientation of the chosen component of the electromagnetic wave field vectors has the same selected predetermined orientation of the chosen component of the electromagnetic wave field vectors as the second selected predetermined orientation of the chosen component of the electromagnetic wave field vectors.

320. A system as described in claim 318 wherein the means for resolving the primary beam into first and second resolved beams includes means for resolving the primary beam into first and second resolved beams in which the first selected predetermined orientation of the chosen component of the electromagnetic wave field vectors has the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors different from the second selected predetermined

orientation of the chosen component of the electromagnetic wave field vectors.

321. A system as described in claim 318 wherein the means for merging the resolved beams includes means for merging the resolved beams in which the plurality of portions of one of the merged resolved beams has a different selected predetermined orientation of a chosen component of electromagnetic wave field vectors from the plurality of portions of the other merged resolved beam.

322. A system as described in claim 318 wherein the means for merging the resolved beams includes means for merging the resolved beams in which each merged beam has its plurality of portions parallel and noncoincident to the plurality of portions of the other merged beam.

323. A system as described in claim 318 wherein the means for merging the resolved beams includes means for merging the resolved beams in which each merged beam has its plurality of portions parallel and partially coincident to the plurality of portions of the other merged beam.

324. A system as described in claim 318 wherein the means for merging the resolved beams includes means for merging the resolved beams in which each merged beam has its plurality of portions parallel and simultaneous to the plurality of portions of the other merged beam.

325. A system as described in claim 318 wherein the means for merging the resolved beams includes means for merging the resolved beams in which each merged beam has its plurality of portions parallel, noncoincident and simultaneous to the plurality of portions of the other merged beam.

326. A system as described in claim 318 wherein the means for merging the resolved beams includes means for merging the resolved beams in which each merged beam has its plurality of portions parallel, partially coincident and simultaneous to the plurality of portions of the other merged beam.

327. A system as described in claim 318 wherein the means for merging the resolved beams includes means for merging the resolved beams in which the plurality of portions of one of the merged beams has the substantially same selected predetermined orientation of a chosen component of electromagnetic wave field vectors as the plurality of portions of the other merged beam.

328. A system as described in claim 318 wherein the means for merging the resolved beams includes means for merging the resolved beams in which the plurality of portions of one of the merged beams has the substantially same selected predetermined orientation of a chosen component of electromagnetic wave field vectors of the plurality of portions of the other merged beam and each merged beam has its plurality of portions parallel and noncoincident to the plurality of portions of the other merged beam.

329. A system as described in claim 318 wherein the means for merging the resolved beams includes means for merging the resolved beams in which the plurality of portions of one of the merged beams has the substantially same selected predetermined orientation of a chosen component of electromagnetic wave field vectors of the plurality of portions of the other merged beam and each merged beam has its plurality of portions parallel and partially coincident to the plurality of portions of the other merged beam.

330. A system as described in claim 318 wherein the means for merging the resolved beams includes means for merging the resolved beams in which the plurality of portions of one of the merged beams has the substantially same selected predetermined orientation of a chosen component of electromagnetic wave field vectors of the plurality of portions of the other merged beam and each merged beam having its plurality of portions parallel and simultaneous to the plurality of portions of the other merged beam.

331. A system as described in claim 318 further comprising means for passing the

first single collinear beam of electromagnetic energy to a projection means.

332. A system of producing a collinear beam of light having two constituent parts, comprising:

[a] means for providing a primary beam of light having a predetermined range of wavelengths, randomly changing orientations of a chosen component of electric field vectors, and a substantially uniform flux intensity substantially across the initial beam of light;

[b] means for resolving the primary beam of light into a primary first resolved beam of light having substantially a first selected predetermined orientation of a chosen component of the electric field vectors and a primary second resolved beam of light having substantially a second selected predetermined orientation of a chosen component of the electric field vectors;

[c] means for altering the selected predetermined orientation of the chosen component of the electric field vectors of a plurality of portions of each of the primary resolved beams of light by passing the plurality of portions of each of the primary resolved beams of light through a respective one of a plurality of altering means whereby the selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the primary resolved beams of light is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of each of the primary resolved beams of light passes through the respective one of the plurality of means for altering the selected predetermined orientation of the chosen component of the electric field vectors;

[d] [i] means for resolving from the first altered primary first resolved beam of light a first resolved beam of light having substantially a first selected predetermined orientation of a chosen component of electric field vectors and a second resolved beam of light having substantially a second selected predetermined orientation of a chosen component of electric field vectors, and

[ii] means for resolving from the second altered primary first resolved beam of light a first resolved beam of light having substantially a first selected predetermined orientation of a chosen component of electric field vectors and

a second resolved beam of light having substantially a second selected predetermined orientation of a chosen component of electric field vectors; and

[e] means for merging one of the resolved beams of light from the altered primary first resolved beam of light with one of the resolved beams of light from the second altered primary resolved beam of light into a first single collinear beam of light.

333. A system as described in claim 332 wherein the means for resolving the primary beam into first and second resolved beams includes means for resolving the primary beam into first and second resolved beams in which the first selected predetermined orientation of the chosen component of the electric field vectors has the same selected predetermined orientation of the chosen component of the electric field vectors as the second selected predetermined orientation of the chosen component of the electric field vectors.

334. A system as described in claim 332 wherein the means for resolving the primary beam into first and second resolved beams includes means for resolving the primary beam into first and second resolved beams in which the first selected predetermined orientation of the chosen component of the electric field vectors has the selected predetermined orientation of the chosen component of the electric field vectors different from the second selected predetermined orientation of the chosen component of the electric field vectors.

335. A system as described in claim 332 wherein the means for merging the resolved beams includes means for merging the resolved beams in which the plurality of portions of one of the merged resolved beams has a different selected predetermined orientation of a chosen component of electric field vectors from the plurality of portions of the other merged resolved beam.

336. A system as described in claim 332 wherein the means for merging the resolved beams includes means for merging the resolved beams in which each merged beam has its plurality of portions parallel and noncoincident to the plurality of

portions of the other merged beam.

337. A system as described in claim 332 wherein the means for merging the resolved beams includes means for merging the resolved beams in which each merged beam has its plurality of portions parallel and partially coincident to the plurality of portions of the other merged beam.

338. A system as described in claim 332 wherein the means for merging the resolved beams includes means for merging the resolved beams in which each merged beam has its plurality of portions parallel and simultaneous to the plurality of portions of the other merged beam.

339. A system as described in claim 332 wherein the means for merging the resolved beams includes means for merging the resolved beams in which each merged beam has its plurality of portions parallel, noncoincident and simultaneous to the plurality of portions of the other merged beam.

340. A system as described in claim 332 wherein the means for merging the resolved beams includes means for merging the resolved beams in which each merged beam has its plurality of portions parallel, partially coincident and simultaneous to the plurality of portions of the other merged beam.

341. A system as described in claim 332 wherein the means for merging the resolved beams includes means for merging the resolved beams in which the plurality of portions of one of the merged beams has the substantially same selected predetermined orientation of a chosen component of electric field vectors as the plurality of portions of the other merged beam.

342. A system as described in claim 332 wherein the means for merging the resolved beams includes means for merging the resolved beams in which the plurality of portions of one of the merged beams has the substantially same selected predetermined orientation of a chosen component of electric field vectors of the

plurality of portions of the other merged beam and each merged beam has its plurality of portions parallel and noncoincident to the plurality of portions of the other merged beam.

343. A system as described in claim 332 wherein the means for merging the resolved beams includes means for merging the resolved beams in which the plurality of portions of one of the merged beams has the substantially same selected predetermined orientation of a chosen component of electric field vectors of the plurality of portions of the other merged beam and each merged beam has its plurality of portions parallel and partially coincident to the plurality of portions of the other merged beam.

344. A system as described in claim 332 wherein the means for merging the resolved beams includes means for merging the resolved beams in which the plurality of portions of one of the merged beams has the substantially same selected predetermined orientation of a chosen component of electric field vectors of the plurality of portions of the other merged beam and each merged beam having its plurality of portions parallel and simultaneous to the plurality of portions of the other merged beam.

345. A system as described in claim 332 further comprising means for passing the first single collinear beam of light to a projection means.

346. A system as described in claim 318 wherein the means for providing a primary beam includes providing a primary beam of ultraviolet.

347. A method of producing one or more collinear beams of electromagnetic energy, comprising:

[a] producing four or more separate beams of electromagnetic energy, each of the separate beams of electromagnetic energy having the same selected predetermined orientation of a chosen component of electromagnetic wave field vectors substantially across each beam, a predetermined range of wavelengths and a

substantially uniform flux intensity substantially across each beam of electromagnetic energy;

[b] altering the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of a plurality of portions of each of the separate beams of electromagnetic energy by passing the plurality of portions of each of the separate beams of electromagnetic energy through a respective one of a plurality of altering means whereby the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the plurality of portions of each of the separate beams of electromagnetic energy is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of each of the separate beams of electromagnetic energy passes through the respective one of the plurality of means for altering the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors;

[c] [i] combining at least one of the altered separate beams of electromagnetic energy with at least one of the other altered separate beams of electromagnetic energy into a first single collinear beam of electromagnetic energy without substantially changing the altered selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the plurality of portions of each of the combined separate beams of electromagnetic energy, and

[ii] combining at least one of the altered separate beams of electromagnetic energy with at least one of the other altered separate beams of electromagnetic energy into a second single collinear beam of electromagnetic energy without substantially changing the altered selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the plurality of portions of each of the combined separate beams of electromagnetic energy;

[d] [i] resolving from the first single collinear beam of electromagnetic energy a first resolved beam of electromagnetic energy having substantially a first selected predetermined orientation of a chosen component of electromagnetic wave field vectors and a second resolved beam of electromagnetic

energy having substantially a second selected predetermined orientation of a chosen component of electromagnetic wave field vectors, and

[ii] resolving from the second single collinear beam of electromagnetic energy a first resolved beam of electromagnetic energy having substantially a first selected predetermined orientation of a chosen component of electromagnetic wave field vectors and a second resolved beam of electromagnetic energy having substantially a second selected predetermined orientation of a chosen component of electromagnetic wave field vectors; and

[e] merging one of the resolved beams of electromagnetic energy from the first single collinear beam of electromagnetic energy with one of the other resolved beams of electromagnetic energy from the second single collinear beam of electromagnetic energy into a third single collinear beam of electromagnetic energy.

348. A method as described in claim 347 wherein step [a] includes producing each separate beam of electromagnetic energy further having a rectangular cross sectional area.

349. A method as described in claim 347 further comprising the step of passing the third single collinear beam of electromagnetic energy to a projection means.

350. A method as described in claim 347 further comprising the step of adjusting the electromagnetic spectrum of at least one of the separate beams of electromagnetic energy.

351. A method as described in claim 350 wherein the step of adjusting the electromagnetic spectrum of at least one of the separate beams of electromagnetic energy includes adjusting the predetermined range of wavelengths of at least one of the separate beams of electromagnetic energy.

352. A method as described in claim 350 wherein the step of adjusting the electromagnetic spectrum of at least one of the separate beams of electromagnetic energy includes adjusting the magnitude of at least one of the separate beams of

electromagnetic energy.

353. A method of producing one or more collinear beams of light, comprising:

[a] producing four or more separate beams of light, each of the separate beams of light having the same selected predetermined orientation of a chosen component of electric field vectors substantially across each beam, a predetermined range of wavelengths and a substantially uniform flux intensity substantially across each beam of light;

[b] altering the selected predetermined orientation of the chosen component of the electric field vectors of a plurality of portions of each of the separate beams of light by passing the plurality of portions of each of the separate beams of light through a respective one of a plurality of altering means whereby the selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the separate beams of light is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of each of the separate beams of light passes through the respective one of the plurality of means for altering the selected predetermined orientation of the chosen component of the electric field vectors;

[c] [i] combining at least one of the altered separate beams of light with at least one of the other altered separate beams of light into a first single collinear beam of light without substantially changing the altered selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the combined separate beams of light, and

[ii] combining at least one of the altered separate beams of light with at least one of the other altered separate beams of light into a second single collinear beam of light without substantially changing the altered selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the combined separate beams of light;

[d] [i] resolving from the first single collinear beam of light a first resolved beam of light having substantially a first selected predetermined orientation of a chosen component of electric field vectors and a second resolved beam of light

having substantially a second selected predetermined orientation of a chosen component of electric field vectors, and

[ii] resolving from the second single collinear beam of light a first resolved beam of light having substantially a first selected predetermined orientation of a chosen component of electric field vectors and a second resolved beam of light having substantially a second selected predetermined orientation of a chosen component of electric field vectors; and

[e] merging one of the resolved beams of light from the first single collinear beam of light with one of the other resolved beams of light from the second single collinear beam of light into a third single collinear beam of light.

354. A method as described in claim 353 wherein step [a] includes producing each separate beam of light further having a rectangular cross sectional area.

355. A method as described in claim 353 further comprising the step of passing the third single collinear beam of light to a projection means.

356. A method as described in claim 353 further comprising the step of adjusting the light spectrum of at least one of the separate beams of light.

357. A method as described in claim 356 wherein the step of adjusting the light spectrum of at least one of the separate beams of light includes adjusting the predetermined range of wavelengths of at least one of the separate beams of light.

358. A method as described in claim 356 wherein the step of adjusting the light spectrum of at least one of the separate beams of light includes adjusting the magnitude of at least one of the separate beams of light.

359. A system of producing one or more collinear beams of electromagnetic energy, comprising:

[a] means for producing four or more separate beams of electromagnetic energy, each of the separate beams of electromagnetic energy having the same

selected predetermined orientation of a chosen component of electromagnetic wave field vectors substantially across each beam, a predetermined range of wavelengths and a substantially uniform flux intensity substantially across each beam of electromagnetic energy;

[b] means for altering the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of a plurality of portions of each of the separate beams of electromagnetic energy by passing the plurality of portions of each of the separate beams of electromagnetic energy through a respective one of a plurality of altering means whereby the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the plurality of portions of each of the separate beams of electromagnetic energy is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of each of the separate beams of electromagnetic energy passes through the respective one of the plurality of means for altering the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors;

[c] [i] means for combining at least one of the altered separate beams of electromagnetic energy with at least one of the other altered separate beams of electromagnetic energy into a first single collinear beam of electromagnetic energy without substantially changing the altered selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the plurality of portions of each of the combined separate beams of electromagnetic energy, and

[ii] means for combining at least one of the altered separate beams of electromagnetic energy with at least one of the other altered separate beams of electromagnetic energy into a second single collinear beam of electromagnetic energy without substantially changing the altered selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the plurality of portions of each of the combined separate beams of electromagnetic energy;

[d] [i] means for resolving from the first single collinear beam of electromagnetic energy a first resolved beam of electromagnetic energy having substantially a first selected predetermined orientation of a chosen component of electromagnetic wave field vectors and a second resolved beam of electromagnetic

energy having substantially a second selected predetermined orientation of a chosen component of electromagnetic wave field vectors, and

[ii] means for resolving from the second single collinear beam of electromagnetic energy a first resolved beam of electromagnetic energy having substantially a first selected predetermined orientation of a chosen component of electromagnetic wave field vectors and a second resolved beam of electromagnetic energy having substantially a second selected predetermined orientation of a chosen component of electromagnetic wave field vectors; and

[e] means for merging one of the resolved beams of electromagnetic energy from the first single collinear beam of electromagnetic energy with one of the other resolved beams of electromagnetic energy from the second single collinear beam of electromagnetic energy into a third single collinear beam of electromagnetic energy.

360. A system as described in claim 359 in which the means for producing four or more separate beams of electromagnetic energy includes means for producing each separate beam of electromagnetic energy having a rectangular cross sectional area.

361. A system as described in claim 359 further comprising means for passing the third single collinear beam of electromagnetic energy to a projection means.

362. A system as described in claim 359 further comprising means for adjusting the electromagnetic spectrum of at least one of the separate beams of electromagnetic energy.

363. A system as described in claim 359 in which the means for adjusting the electromagnetic spectrum of at least one of the separate beams of electromagnetic energy includes means for adjusting the predetermined range of wavelengths of at least one of the separate beams of electromagnetic energy.

364. A system as described in claim 359 in which the means for adjusting the electromagnetic spectrum of at least one of the separate beams of electromagnetic

energy includes means for adjusting the magnitude of at least one of the separate beams of electromagnetic energy.

365. A system of producing one or more collinear beams of light, comprising:

[a] means for producing four or more separate beams of light, each of the separate beams of light having the same selected predetermined orientation of a chosen component of electric field vectors substantially across each beam, a predetermined range of wavelengths and a substantially uniform flux intensity substantially across the initial beam of light;

[b] means for altering the selected predetermined orientation of the chosen component of the electric field vectors of a plurality of portions of each of the separate beams of light by passing the plurality of portions of each of the separate beams of light through a respective one of a plurality of means for altering means whereby the selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the separate beams of light is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of each of the separate beams of light passes through the respective one of the plurality of means for altering the selected predetermined orientation of the chosen component of the electric field vectors;

[c] [i] means for combining at least one of the altered separate beams of light with at least one of the other altered separate beams of light into a first single collinear beam of light without substantially changing the altered selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the combined separate beams of light, and

[ii] means for combining at least one of the altered separate beams of light with at least one of the other altered separate beams of light into a second single collinear beam of light without substantially changing the altered selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the combined separate beams of light;

[d] [i] means for resolving from the first single collinear beam of light a first resolved beam of light having substantially a first selected predetermined

orientation of a chosen component of electric field vectors and a second resolved beam of light having substantially a second selected predetermined orientation of a chosen component of electric field vectors, and

[ii] means for resolving from the second single collinear beam of light a first resolved beam of light having substantially a first selected predetermined orientation of a chosen component of electric field vectors and a second resolved beam of light having substantially a second selected predetermined orientation of a chosen component of electric field vectors; and

[e] means for merging one of the resolved beams of light from the first single collinear beam of light with one of the other resolved beams of light from the second single collinear beam of light into a third single collinear beam of light.

366. A system as described in claim 365 in which the means for producing four or more separate beams of light includes means for producing each separate beam of light having a rectangular cross sectional area.

367. A system as described in claim 365 further comprising means for passing the third single collinear beam of light to a projection means.

368. A system as described in claim 365 further comprising means for adjusting the light spectrum of at least one of the separate beams of light.

369. A system as described in claim 368 in which the means for adjusting the light spectrum of at least one of the separate beams of light includes means for adjusting the predetermined range of wavelengths of at least one of the separate beams of light.

370. A system as described in claim 368 in which the means for adjusting the light spectrum of at least one of the separate beams of light includes means for adjusting a magnitude of at least one of the separate beams of light.

371. A method of producing a modulated beam of electromagnetic energy comprising:

[a] producing an initial beam of electromagnetic energy having a predetermined range of wavelengths and having a substantially uniform flux intensity substantially across the initial beam of electromagnetic energy;

[b] separating the initial beam of electromagnetic energy into two or more separate beams of electromagnetic energy, each of the separate beams of electromagnetic energy having a selected predetermined orientation of a chosen component of electromagnetic wave field vectors;

[c] altering the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of a plurality of portions of each of the separate beams of electromagnetic energy by passing the plurality of portions of each of the separate beams of electromagnetic energy through a respective one of a plurality of altering means whereby the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the plurality of portions of each of the separate beams of electromagnetic energy is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of each of the substantially separate beams of electromagnetic energy passes through the respective one of the plurality of means for altering the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors;

[d] combining the altered separate beams of electromagnetic energy into a single collinear beam of electromagnetic energy without substantially changing the altered selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the plurality of portions of each of the separate beams of electromagnetic energy;

[e] resolving from the single collinear beam of electromagnetic energy a first resolved beam of electromagnetic energy having substantially a first selected predetermined orientation of a chosen component of electromagnetic wave field vectors and a second resolved beam of electromagnetic energy having substantially a second selected predetermined orientation of a chosen component of electromagnetic wave field vectors, whereby the first and second selected predetermined orientation of the chosen component of the electromagnetic wave field vectors are different from one another; and

[f] altering the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of a plurality of portions of the resolved beam of electromagnetic energy by passing the plurality of portions of the resolved beam of electromagnetic energy through a altering means whereby the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the plurality of portions of the resolved beam of electromagnetic energy is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of the resolved beam of electromagnetic energy passes through the plurality of means for altering the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors.

372. A method of producing a modulated beam of light comprising:

[a] producing an initial beam of light having a predetermined range of wavelengths and having a substantially uniform flux intensity substantially across the initial beam of light;

[b] separating the initial beam of light into two or more separate beams of light, each of the separate beams of light having a selected predetermined orientation of a chosen component of electric field vectors;

[c] altering the selected predetermined orientation of the chosen component of the electric field vectors of a plurality of portions of each of the separate beams of light by passing the plurality of portions of each of the separate beams of light through a respective one of a plurality of altering means whereby the selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each of the separate beams of light is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of each of the substantially separate beams of light passes through the respective one of the plurality of means for altering the selected predetermined orientation of the chosen component of the electric field vectors;

[d] combining the altered separate beams of light into a single collinear beam of light without substantially changing the altered selected predetermined

orientation of the chosen component of the electric field vectors of the plurality of portions of each of the separate beams of light;

[e] resolving from the single collinear beam of light a first resolved beam of light having substantially a first selected predetermined orientation of a chosen component of electric field vectors and a second resolved beam of light having substantially a second selected predetermined orientation of a chosen component of electric field vectors, whereby the first and second selected predetermined orientation of the chosen component of the electric field vectors are different from one another; and

[f] altering the selected predetermined orientation of the chosen component of the electric field vectors of a plurality of portions of the resolved beam of light by passing the plurality of portions of the resolved beam of light through a altering means whereby the selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of the resolved beam of light is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of the resolved beam of light passes through the plurality of means for altering the selected predetermined orientation of the chosen component of the electric field vectors.

373. A method of producing a substantially collimated beam of electromagnetic energy having substantially the same selected predetermined orientation of a chosen component of electromagnetic wave field vectors and a substantially uniform flux intensity substantially across the beam of electromagnetic energy, comprising:

[a] providing a substantially collimated beam of electromagnetic energy having a predetermined range of wavelengths;

[b] resolving from the substantially collimated beam of electromagnetic energy a substantially collimated first resolved beam of electromagnetic energy having substantially a first selected predetermined orientation of a chosen component of the electromagnetic wave field vectors and a substantially collimated second resolved beam of electromagnetic energy having substantially a second selected predetermined orientation of a chosen component of the electromagnetic wave field vectors, whereby the first and second selected predetermined orientation of the chosen

component of the electromagnetic wave field vectors are different from one another; and

[c] forming from the substantially collimated first resolved beam of electromagnetic energy and the substantially collimated second resolved beam of electromagnetic energy a substantially collimated single beam of electromagnetic energy having substantially the same selected predetermined orientation of a chosen component of electromagnetic wave field vectors substantially across the substantially collimated single beam of electromagnetic energy and a substantially uniform flux intensity substantially across the substantially collimated single beam of electromagnetic energy.

374. A method as described in claim 373 wherein step [c] includes forming the single beam of electromagnetic energy further having a rectangular cross sectional area.

375. A method as described in claim 373 further comprising between steps [b] and [c] the step of producing from the substantially collimated first and second resolved beam of electromagnetic energy a substantially collimated first and second resolved beam of electromagnetic energy having substantially the same selected predetermined orientation of the chosen component of the electromagnetic wave field vectors.

376. A method as described in claim 373 wherein step [b] includes resolving from the substantially collimated beam of electromagnetic energy a substantially collimated first resolved beam of electromagnetic energy and substantially collimated second resolved beam of electromagnetic energy further having substantially uniform flux intensity substantially across the beam of electromagnetic energy, and step [c] further includes forming the substantially collimated single beam of electromagnetic energy further having substantially the same uniform flux intensity substantially across the beam of electromagnetic energy as that of each of the resolved beams of electromagnetic energy.

377. A method as described in claim 373 further comprising between steps [b] and

[c] the step of producing from the substantially collimated first and second resolved beam of electromagnetic energy a substantially collimated first and second resolved beam of electromagnetic energy having substantially the same selected predetermined orientation of the chosen component of the electromagnetic wave field vectors, whereby the substantially collimated first and second resolved beam of electromagnetic energy are parallel and noncollinear.

378. A method as described in claim 373 further comprising the step of passing one of the substantially collimated resolved beams of electromagnetic energy through a means for changing the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors.

379. A method as described in claim 378 wherein the step of passing one of the substantially collimated resolved beams of electromagnetic energy through a means for changing the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors includes passing one of the substantially collimated resolved beams of electromagnetic energy through a liquid crystal device for changing the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors.

380. A method as described in claim 373 further comprising the step of passing one of the substantially collimated resolved beams of electromagnetic energy through a means for changing the selected predetermined orientation of a chosen component of electromagnetic wave field vectors and changing the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of one of the substantially collimated resolved beam of electromagnetic energy to match substantially the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the other substantially collimated resolved beam of electromagnetic energy.

381. A method as described in claim 373 wherein step [c] further comprises the step of reflecting one of the substantially collimated resolved beams of

electromagnetic energy from one or more reflecting means, each of the reflecting means having means for changing the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors.

382. A method as described in claim 381 wherein the step of reflecting one of the substantially collimated resolved beams of electromagnetic energy from one or more reflecting means, each of the reflecting means having means for changing the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors includes reflecting one of the substantially collimated resolved beams of electromagnetic energy from one or more planar reflecting surface having a dielectric coating, each planar reflecting surface having a dielectric coating including means for changing the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors.

383. A method as described in claim 381 wherein the step of reflecting one of the substantially collimated resolved beams of electromagnetic energy from one or more reflecting means, each of the reflecting means having means for changing the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors includes reflecting one of the substantially collimated resolved beams of electromagnetic energy from one or more mirrors having a thin film dielectric material, each mirrors having a thin film dielectric material including means for changing the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors.

384. A method as described in claim 373 wherein step [a] includes providing a substantially collimated beam of electromagnetic energy further having randomly changing orientations of a chosen component of electromagnetic wave field vectors.

385. A method as described in claim 373 further comprising the step of removing from at least one of the beams of electromagnetic energy at least a predetermined portion of a predetermined range of wavelengths.

386. A method as described in claim 385 further including directing the removed portions to an absorption means.

387. A method of producing a substantially collimated beam of electromagnetic energy having substantially the same selected predetermined orientation of a chosen component of electromagnetic wave field vectors and a substantially uniform flux intensity substantially across the beam of electromagnetic energy, comprising:

[a] providing a substantially collimated beam of electromagnetic energy having a predetermined range of wavelengths and substantially the same selected predetermined orientation of a chosen component of electromagnetic wave field vectors;

[b] resolving from the substantially collimated beam of electromagnetic energy a substantially collimated first resolved beam of electromagnetic energy having substantially a first selected predetermined orientation of a chosen component of the electromagnetic wave field vectors and a substantially collimated second resolved beam of electromagnetic energy having substantially a second selected predetermined orientation of a chosen component of the electromagnetic wave field vectors, whereby the first and second selected predetermined orientation of the chosen component of the electromagnetic wave field vectors are substantially the same; and

[c] forming from the substantially collimated first resolved beam of electromagnetic energy and the substantially collimated second resolved beam of electromagnetic energy a substantially collimated single beam of electromagnetic energy having substantially the same selected predetermined orientation of a chosen component of electromagnetic wave field vectors substantially across the substantially collimated single beam of electromagnetic energy and a substantially uniform flux intensity substantially across the substantially collimated single beam of electromagnetic energy.

388. A method of producing a substantially collimated beam of light having substantially the same selected predetermined orientation of a chosen component of electric field vectors and a substantially uniform flux intensity substantially across the beam of light, comprising:

[a] providing a substantially collimated beam of light having a predetermined range of wavelengths;

[b] resolving from the substantially collimated beam of light a substantially collimated first resolved beam of light having substantially a first selected predetermined orientation of a chosen component of the electric field vectors and a substantially collimated second resolved beam of light having substantially a second selected predetermined orientation of a chosen component of the electric field vectors, whereby the first and second selected predetermined orientation of the chosen component of the electric field vectors are different from one another; and

[c] forming from the substantially collimated first resolved beam of light and the substantially collimated second resolved beam of light a substantially collimated single beam of light having substantially the same selected predetermined orientation of a chosen component of electric field vectors substantially across the substantially collimated single beam of light and a substantially uniform flux intensity substantially across the substantially collimated single beam of light.

389. A method as described in claim 388 wherein step [c] includes forming the single beam of light further having a rectangular cross sectional area.

390. A method as described in claim 388 further comprising between steps [b] and [c] the step of producing from the substantially collimated first and second resolved beam of light a substantially collimated first and second resolved beam of light having substantially the same selected predetermined orientation of the chosen component of the electric field vectors.

391. A method as described in claim 388 wherein step [b] includes resolving from the substantially collimated beam of light a substantially collimated first resolved beam of light and substantially collimated second resolved beam of light further having substantially uniform flux intensity substantially across the beam of light, and step [c] further includes forming the substantially collimated single beam of light further having substantially the same uniform flux intensity substantially across the beam of light as that of each of the resolved beams of light.

392. A method as described in claim 388 further comprising between steps [b] and [c] the step of producing from the substantially collimated first and second resolved beam of light a substantially collimated first and second resolved beam of light having substantially the same selected predetermined orientation of the chosen component of the electric field vectors, whereby the substantially collimated first and second resolved beam of light are parallel and noncollinear.

393. A method as described in claim 388 further comprising the step of passing one of the substantially collimated resolved beams of light through a means for changing the selected predetermined orientation of the chosen component of the electric field vectors.

394. A method as described in claim 393 wherein the step of passing one of the substantially collimated resolved beams of light through a means for changing the selected predetermined orientation of the chosen component of the electric field vectors includes passing one of the substantially collimated resolved beams of light through a liquid crystal device for changing the selected predetermined orientation of the chosen component of the electric field vectors.

395. A method as described in claim 388 further comprising the step of passing one of the substantially collimated resolved beams of light through a means for changing a selected predetermined orientation of the chosen component of electric field vectors and changing the selected predetermined orientation of the chosen component of the electric field vectors of one of the substantially collimated resolved beam of light to match substantially the selected predetermined orientation of the chosen component of the electric field vectors of the other substantially collimated resolved beam of light.

396. A method as described in claim 388 wherein step [c] further comprises the step of reflecting one of the substantially collimated resolved beams of light from one or more reflecting means, each of the reflecting means having means for changing the

selected predetermined orientation of the chosen component of the electric field vectors.

397. A method as described in claim 396 wherein the step of reflecting one of the substantially collimated resolved beams of light from one or more reflecting means, each of the reflecting means having means for changing the selected predetermined orientation of the chosen component of the electric field vectors, includes reflecting one of the substantially collimated resolved beams of light from one or more planar reflecting surface having a dielectric coating, each planar reflecting surface having a dielectric coating including means for changing the selected predetermined orientation of the chosen component of the electric field vectors.

398. A method as described in claim 396 wherein the step of reflecting one of the substantially collimated resolved beams of light from one or more reflecting means, each of the reflecting means having means for changing the selected predetermined orientation of the chosen component of the electric field vectors, includes reflecting one of the substantially collimated resolved beams of light from one or more mirrors having a thin film dielectric material, each mirror having a thin film dielectric material including means for changing the selected predetermined orientation of the chosen component of the electric field vectors.

399. A method as described in claim 388 wherein step [a] includes providing a substantially collimated beam of light further having randomly changing orientations of a chosen component of electric field vectors.

400. A method as described in claim 388 further comprising the step of removing from at least one of the beams of light at least a predetermined portion of a predetermined range of wavelengths.

401. A method as described in claim 400 further including directing the removed portions to an absorption means.

402. A method of producing a substantially collimated beam of light having substantially the same selected predetermined orientation of a chosen component of electric field vectors and a substantially uniform flux intensity substantially across the beam of light, comprising:

[a] providing a substantially collimated beam of light having a predetermined range of wavelengths and substantially the same selected predetermined orientation of a chosen component of electric field vectors;

[b] resolving from the substantially collimated beam of light a substantially collimated first resolved beam of light having substantially a first selected predetermined orientation of a chosen component of the electric field vectors and a substantially collimated second resolved beam of light having substantially a second selected predetermined orientation of a chosen component of the electric field vectors, whereby the first and second selected predetermined orientation of the chosen component of the electric field vectors are substantially the same; and

[c] forming from the substantially collimated first resolved beam of light and the substantially collimated second resolved beam of light a substantially collimated single beam of light having substantially the same selected predetermined orientation of a chosen component of electric field vectors substantially across the substantially collimated single beam of light and a substantially uniform flux intensity substantially across the substantially collimated single beam of light.

403. A method as described in claim 402 wherein the means for providing a substantially collimated beam includes producing a substantially collimated beam of ultraviolet.

404. A system of producing a substantially collimated beam of electromagnetic energy having substantially the same selected predetermined orientation of a chosen component of electromagnetic wave field vectors and a substantially uniform flux intensity substantially across the beam of electromagnetic energy, comprising:

[a] means for providing a substantially collimated beam of electromagnetic energy having a predetermined range of wavelengths;

[b] means for resolving from the substantially collimated beam of electromagnetic energy a substantially collimated first resolved beam of electromagnetic energy having substantially a first selected predetermined orientation of a chosen component of the electromagnetic wave field vectors and a substantially collimated second resolved beam of electromagnetic energy having substantially a second selected predetermined orientation of a chosen component of the electromagnetic wave field vectors, whereby the first and second selected predetermined orientation of the chosen component of the electromagnetic wave field vectors are different from one another; and

[c] means for forming from the substantially collimated first resolved beam of electromagnetic energy and the substantially collimated second resolved beam of electromagnetic energy a substantially collimated single beam of electromagnetic energy having substantially the same selected predetermined orientation of a chosen component of electromagnetic wave field vectors substantially across the substantially collimated single beam of electromagnetic energy and a substantially uniform flux intensity substantially across the substantially collimated single beam of electromagnetic energy.

405. A system as described in claim 404 wherein the means for forming includes means for forming the single beam of electromagnetic energy further having a rectangular cross sectional area.

406. A system as described in claim 404 further comprising means for producing from the substantially collimated first and second resolved beam of electromagnetic energy a substantially collimated first and second resolved beam of electromagnetic energy having substantially the same selected predetermined orientation of the chosen component of the electromagnetic wave field vectors.

407. A system as described in claim 404 wherein the means for resolving the substantially collimated first resolved beam of electromagnetic energy and substantially collimated second resolved beam of electromagnetic energy includes means for providing a substantially uniform flux intensity substantially across the

beam of electromagnetic energy, and the means for forming the substantially collimated single beam of electromagnetic energy includes means for providing substantially the same uniform flux intensity substantially across the beam of electromagnetic energy as that of each of the resolved beams of electromagnetic energy.

408. A system as described in claim 404 further comprising means for producing from the substantially collimated first and second resolved beam of electromagnetic energy a substantially collimated first and second resolved beam of electromagnetic energy having substantially the same selected predetermined orientation of the chosen component of the electromagnetic wave field vectors, whereby the substantially collimated first and second resolved beam of electromagnetic energy are parallel and noncollinear.

409. A system as described in claim 404 further comprising means for passing one of the substantially collimated resolved beams of electromagnetic energy through a means for changing the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors.

410. A system as described in claim 409 wherein the means for passing one of the substantially collimated resolved beams of electromagnetic energy through a means for changing the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors includes means for passing one of the substantially collimated resolved beams of electromagnetic energy through a liquid crystal device for changing the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors.

411. A system as described in claim 404 further comprising the means for passing one of the substantially collimated resolved beams of electromagnetic energy through a means for changing a selected predetermined orientation of a chosen component of electromagnetic wave field vectors and changing the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of one

of the substantially collimated resolved beam of electromagnetic energy to match substantially the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the other substantially collimated resolved beam of electromagnetic energy.

412. A system as described in claim 404 wherein the means for forming further comprises the means for reflecting one of the substantially collimated resolved beams of electromagnetic energy from one or more reflecting means, each of the reflecting means having means for changing the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors.

413. A system as described in claim 412 wherein the means for reflecting one of the substantially collimated resolved beams of electromagnetic energy from one or more reflecting means includes means for changing the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors, the means for changing includes means for reflecting one of the substantially collimated resolved beams of electromagnetic energy from one or more planar reflecting surface, having a dielectric coating, each planar reflecting surface having a dielectric coating including means for changing the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors.

414. A system as described in claim 412 wherein the means for reflecting one of the substantially collimated resolved beams of electromagnetic energy from one or more reflecting means, includes means for changing the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors, the means for changing including means for reflecting one of the substantially collimated resolved beams of electromagnetic energy from one or more mirrors having a thin film dielectric material, each mirrors having a thin film dielectric material including means for changing the selected predetermined orientation of the chosen component of the electromagnetic wave field vectors.

415. A system as described in claim 404 wherein the means for providing a

substantially collimated beam of electromagnetic energy includes means for randomly changing orientations of a chosen component of electromagnetic wave field vectors.

416. A system as described in claim 404 further comprising the means for removing from at least one of the beams of electromagnetic energy at least a predetermined portion of a predetermined range of wavelengths.

417. A system as described in claim 416 including means for directing the removed portions to an absorption means.

418. A system of producing a substantially collimated beam of electromagnetic energy having substantially the same selected predetermined orientation of a chosen component of electromagnetic wave field vectors and a substantially uniform flux intensity substantially across the beam of electromagnetic energy, comprising:

[a] means for providing a substantially collimated beam of electromagnetic energy having a predetermined range of wavelengths and substantially the same selected predetermined orientation of a chosen component of electromagnetic wave field vectors;

[b] means for resolving from the substantially collimated beam of electromagnetic energy a substantially collimated first resolved beam of electromagnetic energy having substantially a first selected predetermined orientation of a chosen component of the electromagnetic wave field vectors and a substantially collimated second resolved beam of electromagnetic energy having substantially a second selected predetermined orientation of a chosen component of the electromagnetic wave field vectors, whereby the first and second selected predetermined orientation of the chosen component of the electromagnetic wave field vectors are substantially the same as one another; and

[c] means for forming from the substantially collimated first resolved beam of electromagnetic energy and the substantially collimated second resolved beam of electromagnetic energy a substantially collimated single beam of electromagnetic energy having substantially the same selected predetermined orientation of a chosen component of electromagnetic wave field vectors substantially

across the substantially collimated single beam of electromagnetic energy and a substantially uniform flux intensity substantially across the substantially collimated single beam of electromagnetic energy.

419. A system of producing a substantially collimated beam of light having substantially the same selected predetermined orientation of a chosen component of electric field vectors and a substantially uniform flux intensity substantially across the beam of light, comprising:

[a] means for providing a substantially collimated beam of light having a predetermined range of wavelengths;

[b] means for resolving from the substantially collimated beam of light a substantially collimated first resolved beam of light having substantially a first selected predetermined orientation of a chosen component of the electric field vectors and a substantially collimated second resolved beam of light having substantially a second selected predetermined orientation of a chosen component of the electric field vectors, whereby the first and second selected predetermined orientation of the chosen component of the electric field vectors are different from one another; and

[c] means for forming from the substantially collimated first resolved beam of light and the substantially collimated second resolved beam of light a substantially collimated single beam of light having substantially the same selected predetermined orientation of a chosen component of electric field vectors substantially across the substantially collimated single beam of light and a substantially uniform flux intensity substantially across the substantially collimated single beam of light.

420. A system as described in claim 419 wherein the means for forming includes means for forming the single beam of light further having a rectangular cross sectional area.

421. A system as described in claim 419 further comprising means for producing from the substantially collimated first and second resolved beam of light a substantially collimated first and second resolved beam of light having substantially

the same selected predetermined orientation of the chosen component of the electric field vectors.

422. A system as described in claim 419 wherein the means for resolving the substantially collimated first resolved beam of light and substantially collimated second resolved beam of light includes means for providing a substantially uniform flux intensity substantially across the beam of light, and the means for forming the substantially collimated single beam of light includes means for forming substantially the same uniform flux intensity substantially across the beam of light as that of each of the resolved beams of light.

423. A system as described in claim 419 further comprising means for producing from the substantially collimated first and second resolved beam of light a substantially collimated first and second resolved beam of light having substantially the same selected predetermined orientation of the chosen component of the electric field vectors, whereby the substantially collimated first and second resolved beam of light are parallel and noncollinear.

424. A system as described in claim 419 further comprising the means for passing one of the substantially collimated resolved beams of light through a means for changing the selected predetermined orientation of the chosen component of the electric field vectors.

425. A system as described in claim 424 wherein the means for passing one of the substantially collimated resolved beams of light through a means for changing the selected predetermined orientation of the chosen component of the electric field vectors includes passing one of the substantially collimated resolved beams of light through a liquid crystal device for changing the selected predetermined orientation of the chosen component of the electric field vectors.

426. A system as described in claim 419 further comprising the means for passing one of the substantially collimated resolved beams of light through a means for

changing a selected predetermined orientation of a chosen component of electric field vectors and changing the selected predetermined orientation of the chosen component of the electric field vectors of one of the substantially collimated resolved beam of light to match substantially the selected predetermined orientation of the chosen component of the electric field vectors of the other substantially collimated resolved beam of light.

427. A system as described in claim 419 wherein means for forming further comprises the means for reflecting one of the substantially collimated resolved beams of light from one or more reflecting means, each of the reflecting means having means for changing the selected predetermined orientation of the chosen component of the electric field vectors.

428. A system as described in claim 427 wherein the means for reflecting one of the substantially collimated resolved beams of light from one or more reflecting means, includes means for changing the selected predetermined orientation of the chosen component of the electric field vectors, the means for changing including means for reflecting one of the substantially collimated resolved beams of light from one or more planar reflecting surface having a dielectric coating, each planar reflecting surface having a dielectric coating including means for changing the selected predetermined orientation of the chosen component of the electric field vectors.

429. A system as described in claim 427 wherein the means for reflecting one of the substantially collimated resolved beams of light from one or more reflecting means, includes means for changing the selected predetermined orientation of the chosen component of the electric field vectors, the means for changing including means for reflecting one of the substantially collimated resolved beams of light from one or more mirrors having a thin film dielectric material, each mirror having a thin film dielectric material including means for changing the selected predetermined orientation of the chosen component of the electric field vectors.

430. A system as described in claim 419 wherein the means for providing a substantially collimated beam of light includes means for randomly changing orientations of a chosen component of electric field vectors.

431. A system as described in claim 419 further comprising the means for removing from at least one of the beams of light at least a predetermined portion of a predetermined range of wavelengths.

432. A system as described in claim 431 including means for directing the removed portions to an absorption means.

433. A system of producing a substantially collimated beam of light having substantially the same selected predetermined orientation of a chosen component of electric field vectors and a substantially uniform flux intensity substantially across the beam of light, comprising:

[a] means for providing a substantially collimated beam of light having a predetermined range of wavelengths and substantially the same selected predetermined orientation of a chosen component of electric field vectors;

[b] means for resolving from the substantially collimated beam of light a substantially collimated first resolved beam of light having substantially a first selected predetermined orientation of a chosen component of the electric field vectors and a substantially collimated second resolved beam of light having substantially a second selected predetermined orientation of a chosen component of the electric field vectors, whereby the first and second selected predetermined orientation of the chosen component of the electric field vectors are substantially the same; and

[c] means for forming from the substantially collimated first resolved beam of light and the substantially collimated second resolved beam of light a substantially collimated single beam of light having substantially the same selected predetermined orientation of a chosen component of electric field vectors substantially across the substantially collimated single beam of light and a substantially uniform flux intensity substantially across the substantially collimated single beam of light.

434. A system as described in claim 419 wherein the means for providing a substantially collimated beam includes means for producing a substantially collimated beam of ultraviolet.

435. A method of producing a modulated beam of electromagnetic energy comprising:

[a] providing an initial collimated beam of electromagnetic energy having randomly changing orientations of the selected component of the electromagnetic wave field vectors and having a substantially uniform flux intensity across substantially the entire beam;

[b] resolving from the initial collimated beam of electromagnetic energy an initial collimated first resolved beam of electromagnetic energy having substantially a first single selected predetermined orientation of a chosen component of the electromagnetic wave field vectors and an initial collimated second resolved beam of electromagnetic energy having substantially a second single selected predetermined orientation of a chosen component of the electromagnetic wave field vectors, whereby the first and second single selected predetermined orientation of the chosen component of the electromagnetic wave field vectors are different from one another;

[c] forming from the initial collimated first resolved beam of electromagnetic energy and the initial collimated second resolved beam of electromagnetic energy a substantially collimated rectangular initial single beam of electromagnetic energy having substantially the same single selected predetermined orientation of a chosen component of the electromagnetic wave field vectors across substantially the entire beam of electromagnetic energy and a substantially uniform flux intensity across substantially the entire initial collimated single beam of electromagnetic energy;

[d] separating the collimated rectangular initial single beam of electromagnetic energy into two or more separate collimated rectangular beams of electromagnetic energy whereby each of the separate collimated rectangular beams of electromagnetic energy has the same single selected predetermined orientation of a

chosen component of the electromagnetic wave field vectors as that of the other separate collimated rectangular beams of electromagnetic energy and each separate collimated rectangular beam of electromagnetic energy having a different electromagnetic energy from the other separate collimated rectangular beams of electromagnetic energy;

[e] adjusting the electromagnetic energy by removing at least a predetermined portion of electromagnetic energy of at least one of the separate collimated rectangular beams of electromagnetic energy and directing the removed portion to a beam stop whereby the removed portion is removed;

[f] altering the single selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of a plurality of portions of each separate collimated rectangular beam of electromagnetic energy by passing a plurality of portions of each separate collimated rectangular beam of electromagnetic energy through a respective one of a plurality of altering means whereby the single selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the plurality of portions of each separate beam of electromagnetic energy is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of each of the substantially collimated separate beams of electromagnetic energy passes through the respective one of the plurality of altering the single selected predetermined orientation of a chosen component of the electromagnetic wave field vectors;

[g] combining the altered separate collimated rectangular beams of electromagnetic energy into a single collimated rectangular collinear electromagnetic energy beam without substantially changing the altered selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the plurality of portions of each separate collimated rectangular beam of electromagnetic energy;

[h] resolving from the single collimated rectangular collinear electromagnetic energy beam a first collimated rectangular resolved electromagnetic energy beam having substantially a first single selected predetermined orientation of a chosen component of the electromagnetic wave field vectors and second collimated rectangular resolved electromagnetic energy beam having substantially a second

single selected predetermined orientation of a chosen component of the electromagnetic wave field vectors, whereby the first and second single selected predetermined orientation of the chosen component of the electromagnetic wave field vectors are different from one another; and

[i] passing one of the first collimated rectangular or second collimated rectangular resolved electromagnetic energy beams to a projection means.

436. A system of producing a modulated beam of electromagnetic energy suitable for projection of video images, comprising:

[a] means for providing an initial collimated beam of electromagnetic energy having randomly changing orientations of the selected component of the electromagnetic wave field vectors and having a substantially uniform flux intensity across substantially the entire beam;

[b] means for resolving from the initial collimated beam of electromagnetic energy an initial collimated first resolved beam of electromagnetic energy having substantially a first single selected predetermined orientation of a chosen component of the electromagnetic wave field vectors and an initial collimated second resolved beam of electromagnetic energy having substantially a second single selected predetermined orientation of a chosen component of the electromagnetic wave field vectors, whereby the first and second single selected predetermined orientation of the chosen component of the electromagnetic wave field vectors are different from one another;

[c] means for forming from the initial collimated first resolved beam of electromagnetic energy and the initial collimated second resolved beam of electromagnetic energy a substantially collimated rectangular initial single beam of electromagnetic energy having substantially the same single selected predetermined orientation of a chosen component of the electromagnetic wave field vectors across substantially the entire beam of electromagnetic energy and a substantially uniform flux intensity across substantially the entire initial collimated single beam of electromagnetic energy;

[d] means for separating the collimated rectangular initial single beam of electromagnetic energy into two or more separate collimated rectangular beams of

electromagnetic energy whereby each of the separate collimated rectangular beams of electromagnetic energy has the same single selected predetermined orientation of a chosen component of the electromagnetic wave field vectors as that of the other separate collimated rectangular beams of electromagnetic energy and each separate collimated rectangular beam of electromagnetic energy having a different electromagnetic energy from the other separate collimated rectangular beams of electromagnetic energy;

[e] means for adjusting the by removing at least a predetermined portion of electromagnetic energy of at least one of the separate collimated rectangular beams of electromagnetic energy and directing the removed portion to a beam stop whereby the removed portion is absorbed;

[f] means for altering the single selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of a plurality of portions of each separate collimated rectangular beam of electromagnetic energy by passing a plurality of portions of each separate collimated rectangular beam of electromagnetic energy through a respective one of a plurality of altering means whereby the single selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the plurality of portions of each separate beam of electromagnetic energy is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of each of the substantially collimated separate beams of electromagnetic energy passes through the respective one of the plurality of altering the single selected predetermined orientation of a chosen component of the electromagnetic wave field vectors;

[g] means for combining the altered separate collimated rectangular beams of electromagnetic energy into a single collimated rectangular collinear electromagnetic energy beam without substantially changing the altered selected predetermined orientation of the chosen component of the electromagnetic wave field vectors of the plurality of portions of each separate collimated rectangular beam of electromagnetic energy;

[h] means for resolving from the single collimated rectangular collinear electromagnetic energy beam a first collimated rectangular resolved electromagnetic

energy beam having substantially a first single selected predetermined orientation of a chosen component of the electromagnetic wave field vectors and second collimated rectangular resolved electromagnetic energy beam having substantially a second single selected predetermined orientation of a chosen component of the electromagnetic wave field vectors, whereby the first and second single selected predetermined orientation of the chosen component of the electromagnetic wave field vectors are different from one another; and

[i] means for passing one of the first collimated rectangular or second collimated rectangular resolved electromagnetic energy beam to a projection means.

437. A method of producing a modulated beam of light suitable for projection of video images, comprising:

[a] providing an initial collimated beam of light having randomly changing orientations of the selected component of the electric field vectors and having a substantially uniform flux intensity across substantially the entire beam;

[b] resolving from the initial collimated beam of light an initial collimated first resolved beam of light having substantially a first single selected predetermined orientation of a chosen component of the electric field vectors and an initial collimated second resolved beam of light having substantially a second single selected predetermined orientation of a chosen component of the electric field vectors, whereby the first and second single selected predetermined orientation of the chosen component of the electric field vectors are different from one another;

[c] forming from the initial collimated first resolved beam of light and the initial collimated second resolved beam of light a substantially collimated rectangular initial single beam of light having substantially the same single selected predetermined orientation of a chosen component of the electric field vectors across substantially the entire beam of light and a substantially uniform flux intensity across substantially the entire initial collimated single beam of light;

[d] separating the collimated rectangular initial single beam of light into two or more separate collimated rectangular beams of color whereby each of the separate collimated rectangular beams of color has the same single selected predetermined orientation of a chosen component of the electric field vectors as that

of the other separate collimated rectangular beams of colors and each separate collimated rectangular beam of color having a different color from the other separate collimated rectangular beam of colors;

[e] adjusting the color by removing at least a predetermined portion of color of at least one of the separate collimated rectangular beams of color and directing the removed portion to a beam stop whereby the removed portion is absorbed;

[f] altering the single selected predetermined orientation of the chosen component of the electric field vectors of a plurality of portions of each separate collimated rectangular beam of color by passing a plurality of portions of each separate collimated rectangular beam of color through a respective one of plurality of altering means whereby the single selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each separate beam of color is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of each of the substantially collimated separate beams of electromagnetic energy passes through the respective one of the plurality of altering the single selected predetermined orientation of a chosen component of the electric field vectors;

[g] combining the altered separate collimated rectangular beams of color into a single collimated rectangular collinear color beam without substantially changing the altered selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each separate collimated rectangular beam of color.

[h] resolving from the single collimated rectangular collinear color beam having substantially a first single selected predetermined orientation of a chosen component of the electric field vectors and second collimated rectangular resolved color beam having substantially a second single selected predetermined orientation of chosen component of the electric field vectors, whereby the first and second single selected predetermined orientation of the chosen component of the electric field vectors are different from one another; and

[i] passing one of the first collimated rectangular or second collimated rectangular resolved color beam to a projection means.

438. A system of producing a modulated beam of light suitable for projection of video images, comprising:

[a] means for providing an initial collimated beam of light having randomly changing orientations of the selected component of the electric field vectors and having a substantially uniform flux intensity across substantially the entire beam;

[b] means for resolving from the initial collimated beam of light an initial collimated first resolved beam of light having substantially a first single selected predetermined orientation of a chosen component of the electric field vectors and an initial collimated second resolved beam of light having substantially a second single selected predetermined orientation of a chosen component of the electric field vectors, whereby the first and second single selected predetermined orientation of the chosen component of the electric field vectors are different from one another;

[c] means for forming from the initial collimated first resolved beam of light and the initial collimated second resolved beam of light a substantially collimated rectangular initial single beam of light having substantially the same single selected predetermined orientation of a chosen component of the electric field vectors across substantially the entire beam of light and a substantially uniform flux intensity across substantially the entire initial collimated single beam of light;

[d] means for separating the collimated rectangular initial single beam of light into two or more separate collimated rectangular beams of color whereby each of the separate collimated rectangular beams of color has the same single selected predetermined orientation of a chosen component of the electric field vectors as that of the other separate collimated rectangular beams of color and each separate collimated rectangular beam of color having a different color from the other separate collimated rectangular beams of color;

[e] means for adjusting the color by removing at least a predetermined portion of color of at least one of the separate collimated rectangular beams of color and directing the removed portion to a beam stop whereby the removed portion is absorbed;

[f] means for altering the single selected predetermined orientation of the chosen component of the electric field vectors of a plurality of portions of each

separate collimated rectangular beam of color by passing a plurality of portions of each separate collimated rectangular beam of color through a respective one of a plurality of altering means whereby the single selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each separate beam of color is altered in response to a stimulus means by applying a signal means to the stimulus means in a predetermined manner as the plurality of portions of each of the substantially collimated separate beams of electromagnetic energy passes through the respective one of the plurality of altering the single selected predetermined orientation of a chosen component of the electric field vectors;

[g] means for combining the altered separate collimated rectangular beams of color into a single collimated rectangular collinear color beam without substantially changing the altered selected predetermined orientation of the chosen component of the electric field vectors of the plurality of portions of each separate collimated rectangular beam of color;

[h] means for resolving from the single collimated rectangular collinear color beam a first collimated rectangular resolved color beam having substantially a first single selected predetermined orientation of a chosen component of the electric field vectors and second collimated rectangular resolved color beam having substantially a second single selected predetermined orientation of a chosen component of the electric field vectors, whereby the first and second single selected predetermined orientation of the chosen component of the electric field vectors are different one from another; and

[i] means for passing one of the first collimated rectangular or second collimated rectangular resolved color beam to a projection means.